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C O N T E N T S

EDITORIAL

Psychiatry Education and 11th five year plan

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Mental health though an integral component of health has often been neglected. Mental illnesses have gained recognition as a major public health problem only in recent years. Why mental health needs important public health priority is well-documented and extensively reviewed elsewhere. Mental and behavioural disorders account for 12 per cent of global burden of disease. The WHO (World health report, 2001) has drawn attention to the fact that of the nearly 45 crores estimated to be suffering from mental and behaviour disorders globally, only a small minority is adequately cared for. The global prevalence of mental and behavioural disorders among the adult population is estimated to be 10 per cent and contributed to four of the ten leading causes of disability, with one in four families suffering from burden. Populations living under rapid social change, disasters, conflict situations, migrant populations and poor, are at higher risk of mental disorders and their psychosocial needs are more. It is estimated that by 2020, 15 per cent of the DALYs lost would be due to mental and behavioural disorders, up from 10 per cent in 1990 and 12 per cent in 2000. The life time prevalence of developing one or more mental and behavioural disorders is estimated to be 25 percent. Putting together all neuropsychiatric conditions, the proportional contribution to the total years lived with disability was 23.3 per cent (Male 24.2 per cent, female 24.9 per cent). The burden is 40 per cent if the most productive age group (15-44 years) is considered (WHO, 2001)[1, 2]. The prevalence of major mental illness is found to be equal in both developing and developed countries. The minor mental illnesses are several folds higher than this. About seven to eight per cent of Indian population is facing some sort of mental problem, of which over 1.5 per cent need special care. So, the magnitude of the problem and its direct and indirect burden in the community is enormous. Unfortunately, majority of these cases remain unrecognized and untreated in our country. The stigma attached to mental illnesses, lack of awareness, non-availability of health services, abysmally low trained mental health professionals, non-affordability are some of the factors which prevent mentally ill persons to seek treatment at an early stage. Effective interventions in mental conditions include medicines, psychological interventions, social interventions and rehabilitation. Based on the global experience, the collective clinical wisdom is to provide care to the mentally ill person in the community and not to isolate them within the four walls of mental hospitals. The integration of mental health care with primary health care is the widely accepted approach. There is also sufficient evidence to show that specific and focused care can be provided by a wide variety of community resources like the family members, school teachers, volunteers, and the ill-persons themselves[3, 4]. Besides curative approach, a number of measures can be taken to prevent some of the mental disorders and to promote mental health. Life skills education of adolescents is known to enhance self-esteem and also to prevent a number of mental health problems. Interventions at the preschool level can prepare the children for better development and fuller utilization of the education in the schools[5].

Creating mental health awareness in the general population is an oft-repeated slogan in different platforms. Misconception and stigma related to mental illness is rampant not only among the illiterate people – it is widely prevalent even among the educated section of the society. Even today mental illnesses are often treated by faith healers or by some traditional methods. People have misconceptions about mental hospital and methods of treatment. In spite of the National Metal Health Programme, launched by the Government of India in 1982 and the Mental Health Act passed by the Supreme Court of India in 1987, the scenario has not changed much. It is sad but true that some of the non-psychiatry specialists and general practitioners are also not free from this stigma and misconception. It is not very uncommon experience for many mental health professionals that our patients are denied the much-needed anesthesia, operation or some other invasive procedure in the pretext of one or other. But the sole factor which is working in such cases is stigma and ignorance about mental illness. When a person with some cardiac, neurological or other systemic illnesses are also suffering from psychiatric illness, which is severe enough to affect the quality of life - often the concerned

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specialists are reluctant to refer him to psychiatrist lest their patient will be offended. There are ample evidences where the patient is willing to consult a psychiatrist for their psychological problem but the treating specialists forbid him /her to take psychotropics. Even mental health professionals often fail to take a proactive role in such cases. Lack of exposure to psychiatry in medical training is to blame for all these unfortunate happenings. Physicians with favorable attitudes toward psychiatry have had significantly more exposure to psychiatry courses in medical school[6]. Inclusion of psychiatry as examination subject in the undergraduate curriculum like in the West is considered a solution for these biases. The global burden of disease due to neuropsychiatric disorders is too high to be ignored. Even the Bhore Committee (1946), Mudaliar Committee (1962) and National Health Policy (1983) emphasized training of undergraduates students in psychiatry and training nonpsychiatrists in the basic principles of psychiatric diagnosis and treatment.[7] Though Medical Council of India has an ambitious curriculum on psychiatry at M.B.B.S. level and in spite of recommendations of various committees, including one by Medical Council of India itself, to make psychiatry a separate subject, it is still taught as an allied discipline of Medicine[8]. In spite of sincere efforts of Indian Psychiatric Society for inclusion of psychiatry in undergraduate curriculum there is no progress so far. From western experiences it is suggested that an increase in the time devoted to psychiatry in the undergraduate timetable is not cost-effective in terms of improved recruitment, but surely it is a matter of quality not quantity[9].

India was one of the first developing countries to develop and implement a National Mental Health Programme. The National Mental Health Programme was started in 1982 with the objectives of making available basic mental health care to all of the population; application of mental health in social development and to promote community participation using the existing public health infrastructure. It was initiated by the Government of India to integrate mental health with other health services at rural level. The initial district level model developed in the Bellary district of Karnataka extended to 27 districts and later on to 100 districts with the basic approach to integrate mental health with general health care to cover a larger population.

The programme failed to achieve its objectives in many ways. It came under criticism for its emphasis on identifying and treating severe mental disorders , while not addressing common mental disorders which are equally disabling. Implementation of National Mental Health Programme has been hindered by a greater focus on illness rather than on comprehensive mental well-being. Scant budgetary allocation in mental health is another obstacle for successful implementation of the programme. Till recently less than one per cent of India's total health budget is spent on mental health, with a large chunk being devoted to communicable diseases. There are certain areas which were not been given adequate attention in the National Mental Health Programme. The life skills education for adolescents and youth is still in its initial phase in few centres. In spite of the attention to suicide by farmers, the number of centres providing suicide prevention is limited to a few centres only. The excellent model of disaster mental health care has not been a part of the past National Mental Health Programme efforts. The human resource development to meet the needs has not been addressed. The issues of rapid social change and the ways to help populations experiencing the ill effects of these changes are still not a subject of attention. The current models are largely rural population oriented and viable models for urban populations are far away in development.[5]

A large number of people with mental problems do not seek help out of ignorance, for fear of stigma or for lack of service. The problem has been compounded as the number of trained mental health professionals capable of dealing with the problem was totally inadequate to the proportion of population requiring the help. This is considered an important reason for the poor achievement of National Mental Health Programme. There are only 3,500 psychiatrists to treat around 9 per cent of the population that suffers from mental disorders. The professionals in the allied fields are also less. For every 100,000 people, India has 0.4 psychiatrists, 0.04 psychiatric nurses, 0.02 psychologists and 0.02 social workers and 0.25 psychiatric beds, according to 2001 figures by WHO[1]. Just one psychiatrist is available for every 3-lakh population. The psychiatrist-population ratio in rural areas is estimated at less than one for every million. As per recent government notification the estimated requirement is 11500 psychiatrists, 17250 clinical psychologists, 23000 psychiatric social workers and 3000 psychiatric nurses. So, there is acute shortage of qualified mental health professionals. But the number of psychiatrists required depends on the role of psychiatry, which changes from generation to generation. It also varies from country to country. The dearth of psychiatrists is not a problem of developing country like India alone. Though the reasons

are different, even the western countries are also facing crisis in recruitment in psychiatry. Crucial point is whether the psychiatrist's role is confined to diagnosis and prescription (or care planning) or whether it also involves psychological treatment. Comprehensive assessment can be done only by doctors, but psychotherapy and continuing support can be provided by nursing staff, psychologists, social workers and other professionals.

The existing training infrastructure in India produces approximately 320 psychiatrists, 50 clinical psychologists, 25 psychiatric social workers and 185 psychiatric nurses per year. Lack of manpower, both medical and non-medical, is the main obstacle in implementing the National Mental Health Programme in the previous Five year plans and to tackle this in the 11th five year plan (2007-2012) the National Mental Health Programme is revamped and set for expansion with a proposed outlay of over Rs.1, 000 crores. The 11th Five Year Plan recognizes the importance of mental health care and aims to concentrate on providing counselling, medical services, and establishing help lines for all, especially people affected by calamities, riots and violence. The need for mental health interventions is also identified by National Farmers Commission to address the growing problem of farmers' suicides.

The Cabinet Committee on Economic Affairs recently approved the National Mental Health Programme for Manpower Development. At least 11 Centres of Excellence of Mental Health & Neuro-Sciences are proposed to be established by upgrading and strengthening identified existing mental health institutes/hospitals with budgetary support up to Rs. 30 crores per center. This would result in increase in at least 44 PG seats in Psychiatry, 176 M.Phil seat Clinical Psychology and Psychiatric Social Worker each and 220 seats in Diploma in Psychiatric Nursing. Other training centres like Government Medical Colleges/ General hospitals/State run mental health institutes would also be supported for starting PG courses or increasing the intake capacity for PG training in mental health with support of up to Rs. 51 lakh to Rs. 1 crore per PG department. This scheme is expected to further generate about 60 psychiatrists, 240 clinical psychologists, 240 Psychiatric Social Workers and 600 Psychiatric nurses per year. The state government should make a firm commitment to take over the entire funding of the scheme after 11th five year plan period. Suicide prevention will be an important part of the programme since such cases have shown an increase lately. Establishment of Regional Institutes of Mental Health and Neuro Sciences, involving voluntary groups, raising awareness about mental diseases and monitoring and evaluation are some other components of the re-energised National mental health programme. It is proposed to extend the district mental health programmes to more districts in a phased manner. All mental health hospitals would be modernized and the district authorities would be asked to go for community mental health services, life skill education and counseling in educational institutions. Workplace stress management is also important component of the district mental health programme. The existing health staff in the districts would be provided short-term training to deliver basic mental health services. The programme also requires setting up of State and District Cells for implementing the programme, training being an important component. The State Mental Health Cell will be established with Central assistance to supervise and implement the programme and function as technical support team to assist the state nodal officer. There is also a plan to have drug distribution centres on the pattern of Directly Observed Therapy Short-course (DOTS) Tuberculosis centres for easy availability of psychotropic drugs and effective monitoring. In the 11th Plan more pragmatic and serious efforts are being made to empower the disabled and focusing special attention on monitoring mechanisms in order to fulfill the commitment of "Reaching the unreached". From the "Welfare Approach" in the 9th Plan the approach and focus has been shifted to a "Rights based approach" in the 11th Plan. 11th Plan is based on the Persons with Disabilities-PWD (Equal Opportunities, Protection of Rights and Full Participation) Act (1995), National Policy for Persons with Disabilities (2006) and United Nation Convention for Rights of Persons with Disability (UNCRPD). In the PWD Act mental illnesses are also included as so-called "seventh disability". In 11th Plan, Disability Division of Ministry of Social Justice and Empowerment will be upgraded into a separate department. Office of the Commissioner Disabilities to be strengthened so that they can perform more effectively and ensure different Ministries/ Departments performs their function.

For manpower development the Medical Council of India has promised to create more awareness among students in medical colleges to take up postgraduate course in psychiatry. The Medical Council has granted permission during 2005-2008 to start Doctors of Medicine (MD) in Psychiatry courses at 18 institutes and Diploma in Psychological Medicine (DPM) course in 7 institutes. The council also asked four institutes to increase the number of seats in MD (Psychiatry) course. This has resulted in addition of 25 seats in MD (Psychiatry) course and 8 seats

in DPM course. Recently Medical Council of India has given letter of permission to start or increase PG course in Psychiatry to 17 institutions in the year 2009. Similarly to face the acute shortage of Clinical Psychologists and Psychiatric Social Workers in the District mental health programme, it is decided to recruit persons with M.A. in Psychology and MSW in Social work on temporary basis and to train them for 3 months about the programme and its implementation. Regional centers are identified for the training in different regions of the country.

But manpower generation cannot be the only answer for alleviating mental health related problems in the society. It is suggested that the overall effort should be to create structures that will meet the long-term mental health programme development in the country, as against the focus on only rapid expansion of the current models of care. There is a need to recognize that no amount of progress in private psychiatry in India will take us to the goal of providing essential mental health care for the majority[5]. Maintaining the quality of the post graduate education in mental health should also be given a high priority. General objective of the psychiatric training programme is to enable the candidate to acquire knowledge, skills and desirable attitudes in the principles and practice of psychiatry and gain a particular proficiency in the widely accepted theories and technique. It is extremely important for residents to develop skill and critical thinking regarding all aspects of psychiatric treatments by the end of their training period. The uniformity of the curriculum of different centres must be ensured. With the rapid development of the neuroscience, frequent revision of syllabus becoming mandatory. Providing the residents the exposure to a sufficient number of patients with a variety of psychiatric disorders is essential for a successful training programme. Rotations provide excellent volume of patients with appropriate supervision. Either too few or too many patients are not ideal for competency based learning. Supervised treatment of a reasonable number of patients is necessary. Training in psychotherapeutic skills involves a combination of formal lectures, demonstrations, observation, and practice throughout the training period. Monitoring the quality of teaching of the proposed new departments will be a challenging task for the regulatory bodies. How the newly developed department will provide exposure to adequate number of cases of Child and Adolescent Psychiatry, Geriatric Psychiatry, Substance abuse, Consultation-Liaison Psychiatry, Forensic Psychiatry, Neurology and supervise the training is noteworthy. This is crucial because mere increase in number of professional is not the goal. Evaluation of training also needs reconsideration. Just one assessment at the end of the training period is unlikely to judge the capability of candidate in true sense. Rather than conventional methods, the Objective Structured Clinical Examination (OSCE) is increasingly used for assessment of students. Adaptation of OSCE is also tried for training of psychiatric residents and found to be convenient, cost-effective with limited demands on resources[10].

To change the negative attitude of medical students towards psychiatry, the psychiatric training in the undergraduate level should be improved. Training of more allied mental health professionals is also necessary. There must be clear guidelines for the different paraprofessionals like counselors, volunteers and family level carers etc., who are part of the mental health programme.

Psychiatric intervention must start with sensitizing the first line of contact in the community – schools, workplaces, emergency psychiatry and primary healthcare providers. Till psychiatry is included in undergraduate curriculum, basic training should be provided to doctors so that they could understand the basic symptoms of any mental disorder and provide necessary counselling and treatment to the people at the district level. This can prevent the discrimination of mentally ill persons. Creating manpower alone will not solve the problem if proper plan is not made to retain this manpower in the programme. For the young mental health professionals attraction of greener pasture in the West is too tempting. There are enough evidences that persons with negligible exposure to mental health are doing private practice as self-proclaimed experts and hoodwinking the gullible public. The government as well as the professional bodies are in blissful ignorance to this. Coordinated efforts of professionals, policy makers, stakeholders and non-government organizations are necessary for successful implementation of the revised National Mental Health Programme.

In a recent development, a taskforce of Union health ministry has decided to scrap all regulatory bodies, including the Medical Council of India, Dental Council of India, Pharmacy Council and the Nursing Council and form a single regulatory body- National Council for Human Resource in Health in order to revamp the health education in the country[11]. The change is warranted as the existing councils failed to wield in a synergistic manner. The council will be constituted as an autonomous body independent of government controls with adequate power including quasi-judicial. This Council will oversee seven departments related to medicine, nursing, dentistry, rehabilitation and

physiotherapy, pharmacy, public health/hospital management and allied health sciences. The health ministry has already readied the National Council for Human Resource in Health Draft Bill, 2009. The Council will perform not only the regulatory functions but also the functions of assessment and accreditation of medical and health institutions across the country. The council will coordinate the entire gamut of medical and health education in India. This will include drafting courses and period of study, including practical training, subjects of examination and standards of proficiency, conditions for admissions to courses, provide guidelines on curriculum planning, monitoring and overseeing the implementation of undergraduate/postgraduate courses with flexibilities for local specific module. Though all central and state universities will conduct their own examinations and award degrees, the national council will conduct national level exit examinations to standardize undergraduate/ postgraduate medical and allied health courses. The task force has proposed that prominent hospitals across the country be allowed to offer post-graduate courses. Seats in post-graduate courses are so few that students have to study what is given to them rather than what they want to pursue. Only time will say how much emphasis the council will give to mental health.

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ORIGINAL ARTICLE

Impacts of Mine Closure on the quality of life of the neighboring Community

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ABSTRACT

The quality of life in the society in the neighborhood of mining is result of gradual adoption of a characteristic life-style that is highly influenced by mining industry. There are number of attributes of a family and the society that are affected by mining. The overall realization of these impacts is reflected on the quality of life. In order to sustain the societal developments beyond the mine closure, it is essential to plan post mining activities in the area. To minimize the societal impacts on the nearby communities, it is necessary to predict

the impacts of mine closure before closure planning is initiated. However, there are no comprehensive indicators and methodology to measure social impact of mine closure. This paper highlights the results of a study to quantify the degree of adverse effects of mine closure on the quality of life of neighboring communities adopting the Structural Equation Modeling (SEM) and the Latent Variables Interaction Modeling (LVM) techniques

Keywords : Mine closure, impact assessment, structural equation modeling, latent variable interaction modeling, quality of life

INTRODUCTION

The development of a country is largely dependent on the availability of raw materials and energy source. The mining industry provides the necessary fossil fuel or nuclear fuel for the growing energy demands. It also supplies the raw materials for steel making, aluminum extraction as well as all other metals required for sustaining the modern civilization.

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Most of the mines are located in the remote areas and surrounded by villages of economically and opportunity deprived community. It should be noted that mining is a temporary business and every mining operation is bound to face closure after resource exhaustion or change in the economics of mining. Opening of a new mine in a remote area brings lot of social changes in the vicinity. The people cope with the changes and start living with a new life style and the neighboring community becomes dependent on the mining operations. Therefore, mine closure can induce a high level of social stress on the community and if not adequately addressed in time can lead to social unrest, agitations and even terrorism. Hence, it is important that mine closure is undertaken in a planned and effective manner to avoid social risks and reduce the post closure liabilities and economic burden of the mining company as well as of the government[1].

Managing the environmental impacts of mining and rehabilitation of mine land after closure have been major concerns for governments and mining companies[2]. . In most of the countries, mining companies are required to prepare rehabilitation and reclamation plans before starting of mining operations and require financial surety to ensure reclamation[3,4,5]. Special funding arrangements are also available to clear up abandoned mine sites[6, 7]. However, such stringent regulations have not been imposed to address the local social and economic impacts of mine closure. The stresses induced by mine closure on the people living in the mining areas and impacts on the quality of life needs to be addressed adequately.

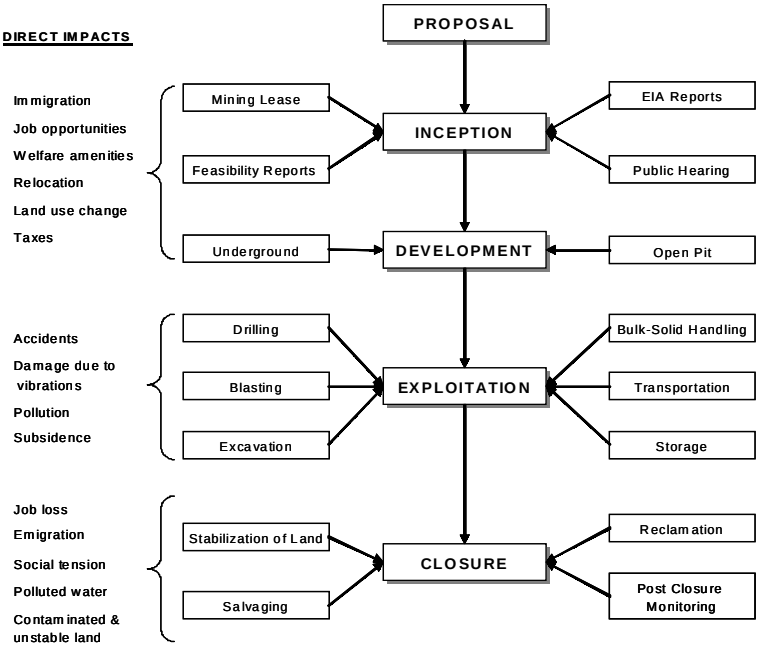
Socio Economic Impacts of Mine Closure

Every stage of mining is associated with specific environmental and social impacts, which often remain significant after closure. When mining operations are initiated in a remote area, they bring sudden changes in the social structure and supply/demand scenarios in the area. If a mineral deposit is found below grown-up areas, the mining project calls for rehabilitation of the project affected people (PAP). The site-specific characteristics of mining industry force the PAP for relocation. As mining progresses, large influx of population to the area put strain on the existing services and business structure. Services and infrastructure

such as power, sewage and housing are developed to meet increased population which in turn increase tax burden on the existing community[8].

Further, impacts of mine closure on the community are often severe. Mine closure is associated with loss of livelihood of a larger fraction of the population of the mining area and results in a sharp decline in their standard of living. Such experiences frequently induce anxiety and stress. The strains on workers produce increased stress within the family. The demoralizing effects of mine closure on the wider mining communities are evident in the deterioration of the physical environment, control over young people and participation in the community life. On the other side, mine closure may result loss of community facilities and withdrawal of informal services such as housing maintenance and emergency services, which were provided by the mine management[9]. Figure 1 illustrates the impacts of mining on social and natural environment at the different phases of the mining life cycle.

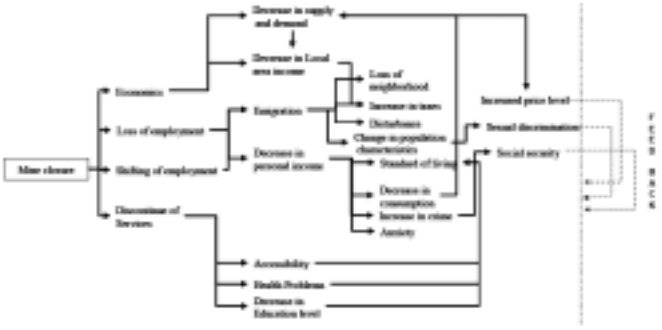
Figure 1. Socio environmental impacts of mining during its life



Mining industry plays a major role in the diversified economy of a mining area by providing income, employment and services. In most cases, the community and the mine develop an interdependent relationship, in terms of employment, services, infrastructure, environmental impact issues, or taxes and royalties. Moreover, a major portion of government tax revenue comes from mining[8]. Thus, after the mine closure government will not be able to maintain the same level of income. Hence, closure may leave a severe impact on the government's ability to sustain its services. It is, therefore, very important for governments and communities to understand and plan for the eventuality of mine closure. Figure 2 shows the network of impacts of mine closure which shows that there is a perpetual loop which makes the impacts are a never ending phenomenon.

There is no doubt that in a mining life cycle the issue of mine closure is very crucial and important because the post closure impacts of unplanned closing of a mine are severe on the natural environment and the community[1]. Further, abandoned mining sites continue to pose potential threat to human safety, health and environment[10]. The primary causes of all the above impacts are loss of employment, labor migration, abandoning of service and facilities, loss of community cohesiveness and environmental degradation[9] which have close relation with Quality of Life (QOL). Current evidences suggest that the demographic variables, environmental characteristics, health, leisure, socio-economic status etc. are the potential factors influencing quality of life of the people[11, 12]. Therefore, closure of a mine may have adverse affect on QOL of the communities.

Figure 2. Network of impacts of mine closure.



Quality of Life Approach

Quality of Life (QOL) is an area of study that has attracted an ever increasing amount of interest over the past two decades and emerged as salient construct on academic and political agendas in many developed and developing nations[13]. Initially, the concept was applied in

the field of sociology, but today it is commonly applied to other disciplines such as, health[14, 15], rehabilitation [16, 17], disabilities studies[18] and social services [19] but also in medicine [20], education[21] , environment [22] and others. Most people accept that QOL is an aim for both individual and group of individuals [23]. Although, it is defined in many ways, its objective is to enable people to live quality lives that are both meaningful and enjoyed.

In its efforts towards sustainability, the mining industry has used several environmental and economic indicators to assess its performance[24, 25]. In recent years, Quality of Life (QOL) assessment has proved to be one of the most attractive approaches for this task. Mining activities improve the QOL of the communities living in the nearby areas, since it contributes a lot in terms of direct and indirect employment, services, local and national economic development[26, 27, 28, 29] . However, impacts of mine closure on QOL is not same for all the families in a community, it depends on how the families depend on the mining in terms of personal income, services, education, health, etc. The basic questions involved in the present investigation are how does mining influences the quality of life of people living nearby, what is going to happen if mining is ceased and how mine closure decisions influence the well being of the neighboring communities.

Measuring Quality of Life

Prior to the 1970s, traditional objective indicators were accepted as suitable predictors of human welfare[30]. However, in the early 1970's, social scientists concluded that quality of life was more than a city's financial position or a country's Gross Domestic Product[31, 32] . Factors such as personal income, housing, education, number of doctors, and parks, and green space were recognized as indicators to quality of life[32, 33] . By late 1970s and into the 1980s, there was a marked shift in how quality of life was defined and measured. Subjective measures were used to mediate the weakness associated with using objective indicators to measure quality of life[34] . Cummins, 2000[35]; Felce , 1995[36],1997[37] and Smith, 2000[13] recognized that both subjective and objective information are necessary to measure QOL.

The subjective nature of quality of life is commonly cited in the health related literature[38, 39] . In contrast, objective factors play an important role in evaluating QOL of city and country level. Lee (2002)[40] and Singh and Chand (2000)[41] used objective indicators such as wages and housing expenditure, infrastructure in evaluate QOL. However, both subjective and objective approaches found predominance in QOL measurement[32, 35, 36] . Linga and Subramanya (2005)[42] used both objective and subjective measures in assessing QOL of mining communities using the economic, social, political, biophysical, biomedical, and spiritual dimensions. Poston et al., (2003)[43], made a qualitative inquiry into individual family quality of life using both subjective and objective dimensions.

Ontario Social Development Council (1997)[44] accepted that the purpose of the Quality of Life (QOL) measurement is to provide a tool for community development which intended to monitor conditions that affect the living and working conditions of people and focus community action on ways to improve health. Whether we measure the quality of life in terms of subjective variables or objective variables, to improve quality life one has to ameliorate the objective variables of the Quality of life. For example one person's subjective response of health is poor; to improve his health one has to search for objective variables which are responsible for his poor health. However, objective measures alone can not give true picture of QOL[35, 36] . Thus, in order to improve quality of life of a community or group of people, it is necessary to establish a relationship between subjective and objective QOL dimensions. These dimensions near a mining site vary significantly with the performance of the industry as well as with the phase of the mining operations. In the closing phase the situations may worsen if adequate technical measures are not taken at the planning stage.

Methodology to Quantify Impact of Mine Closure

A quality of life based methodology was developed to quantify societal impacts of mine closure which would help in planning. It was identified that wealth, education, health, etc. are the key factors to define the quality of life of mining communities. QOL of mining community depends on number of domains that are having direct, indirect or both type of dependencies on the mining activities. However, these domains cannot be quantified easily. The most appropriate method is to take a site specific methodology for collection of data from the families and individuals through structured questionnaire. In the present study, both quantitative and qualitative information was obtained from the selected mining areas. Structural Equation Modeling (SEM) technique was used to evaluate the interrelationship between QOL domains. The LISREL (LInear Structural RELations) software was used for this purpose. SEM provided latent variables scores were used for further testing of changed scenario. The developed methodology was validated in a a surface iron ore mine using data obtained through the structured questionnaire. The datasets so obtained were subsequently analyzed using the software LISREL 8.72 and possible impacts of mine closure were estimated. The overall methodology used for the study is illustrated in Figure 3.

In the last few decades, scientists offered several alternative approaches to define and measure quality of life using social indicators such as health and levels of crime, subjective well-being, and economic indices. Quality of life is a multidimensional concept [19] and is associated with many factors, accounting and identifying all the parameter is rather difficult. In most cases the quality of life is accounted by only health; however other parameters like socio-wealth, education, services, and housing also contribute to the quality of life. Figure 4 shows the conceptual QOL model which illustrates the factors of quality of life and their influencing parameters.

Figure 4. The conceptual SEM model for evaluating QOL of mining communities.

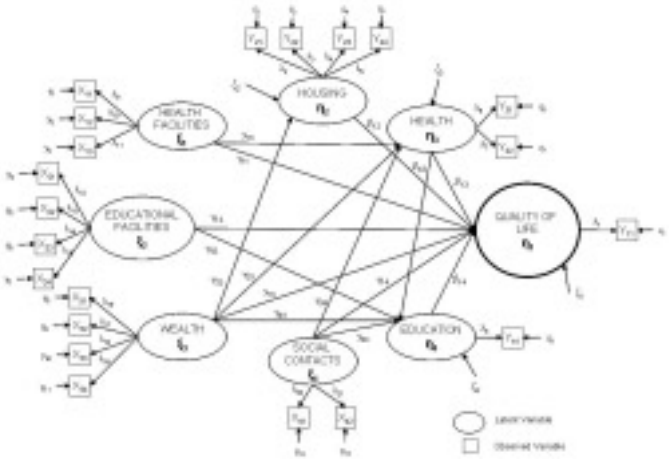
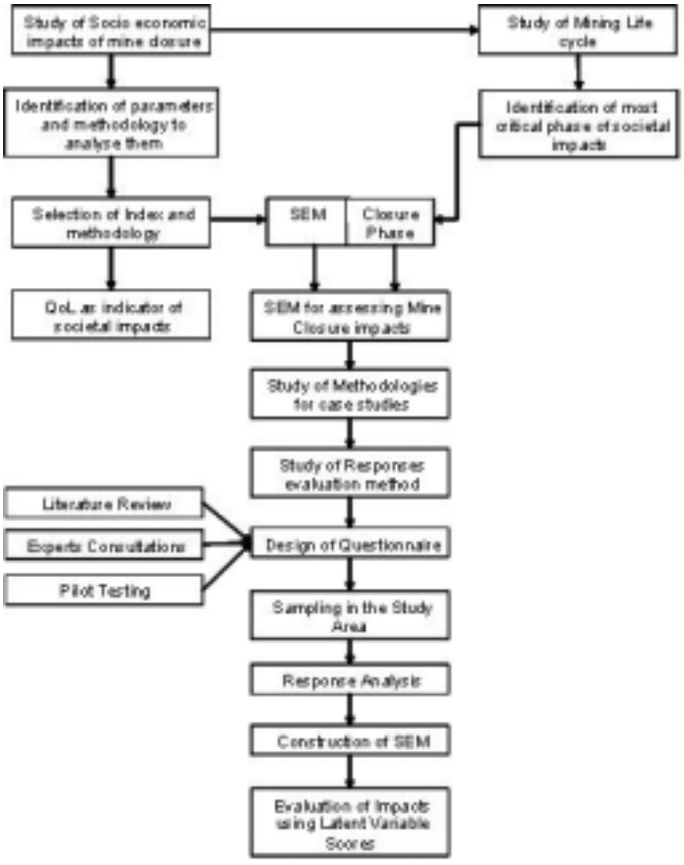


Figure 3. The methodology used for the present study

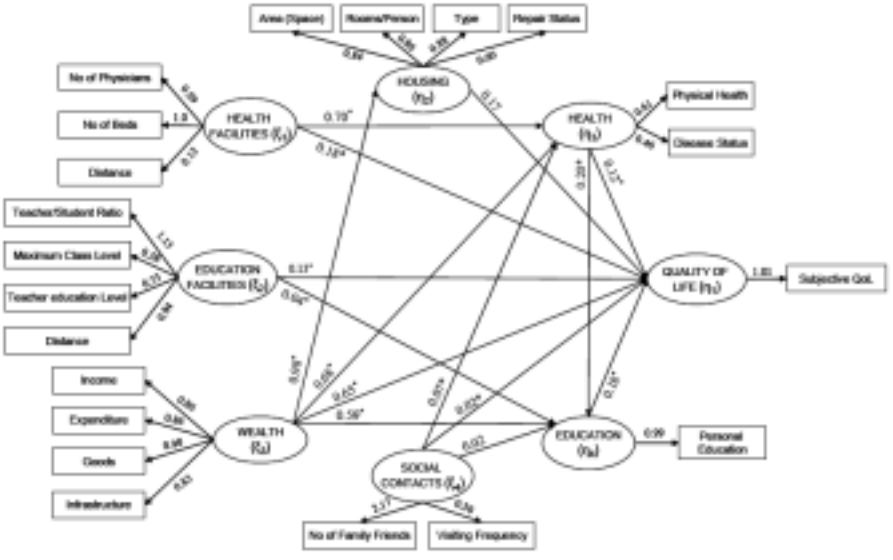


NOTE: Y11=Subjective QOL, Y21=Spaciousness, Y22=Room/Head, Y23=Type, Y24=Repair Status, Y31=Physical Health, Y32=Disease Status, Y41=Education, X11=No of Physicians, X12=No of Beds, X13=Distance, X21=Teacher-Student Ratio, X22=Maximum Class Level, X23=Teacher Education Level, X24=Distance, X31=Income, X32=Expendture, X33=Goods, X34=Infrastructure, X41=No of Contacts, X42=Frequency of Visiting

Figure 5 indicates that all path coefficients in the developed model are significant at 0.05 level, with an exception to the following two paths:

1) From the social contacts to the personal education
2) From housing to quality of life.

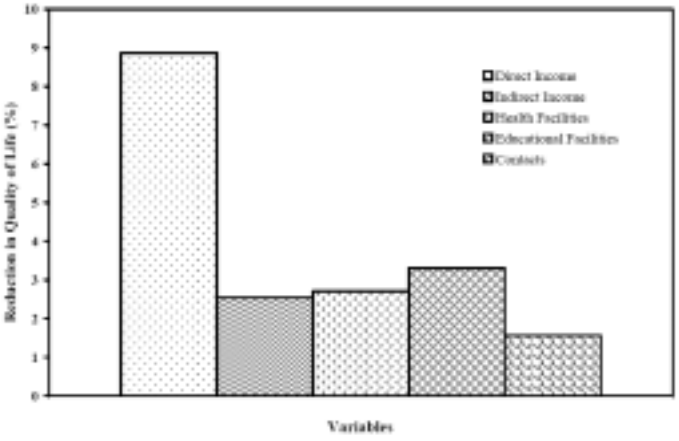
Figure 5. Quality of life model established for the study



Impact Analysis

Impact of mine closure on the QOL of the nearby communities was quantified using latent variable models. The impact was measured in step-wise manner, i.e. first impact of mine closure on a variable was measured then influence of that variable on overall QOL was quantified. Similar procedure followed for each

Figure 6. Possible reduction in the quality of life of the communities due mine closure.



variable separately to evaluate the impact QOL due to each variable. Prior, to measuring the impacts, the present QOL was quantified using the data collected from mining communities using structured questionnaire and latent variable models.

Impact on the QOL due to loss of mining income was evaluated by recalculating the monthly income of the families after subtracting the income derived from mining. Modified monthly income was taken as an input to the latent variable model (LVM) and recalculated the QOL. The percentage of change in the QOL has been shown in the Figure 6. This shows the impact on the people who directly draw income from mining company in the form of their monthly salaries. However, the benefits that may be received from the mining company after mine closure is not considered in the evaluation the impact.

It was calculated from questionnaire responses that on average ~43% of the present mining based indirect income will be lost due to mine closure. Impact due to loss of this income was evaluated by recalculating the family income by subtracting the 43% of the indirect mining depended income. Modified income was taken as an input to the latent variable model (LVM) to calculate the QOL. The Figure 6 shows the impact on the people who indirectly depend on mining for their monthly income such as businessmen, daily labors, temporary workers in the mines, domestic workers etc.

Impact of health and education facilities was calculated by replacing health/education facilities variable values by the facilities that will remain after closure (assumed that Govt. provided health/education facilities and other private facilities will remain in place after closure). Similarly, impact on QOL due to emigration was derived by subtracting the number of migrated family friends from present family friends. Figure 6 shows the impact on QOL of the communities due above variables.

DISCUSSION

Mine closure has a significant impact on the QOL of the neighboring communities. This is quantitatively established through structural equation modeling and latent variable modeling which had demonstrated that satisfaction with life in general could be predicted by objective life status. Structural equation modeling was used to propose and test a good fit model for evaluating impacts of mine closure on the neighboring communities. This was done by examining the effects of income, health and education facilities, inter-family relations on housing, health, education and finally on QOL.

Conforming to the findings of Smith (1999)[45] and Ettner (1996)[46], the developed model in the present study shows positive correlation between health and economic resources. Themodel establishes that income, expenditure, goods and facilities are proxies for wealth and have positive contribution to health. Health facilities have positive significant role in improving health of the communities and family health has significant contribution in improving QOL, hence health facilities directly as well as indirectly brings a significant change in the

QOL. It was observed that number of physicians and number beds are appear to be good predictors of health facilities than distance form the community, possibly because people prefer better health facilities even at a greater distance.

It was revealed that education facilities have little influence on QOL. Most of the villages in the study area have elementary schools and high schools which are maintained by the government. Further, most of the people are illiterates due to lack of educational awareness. This may be the reason for little influence of education facilities on education. Teacherstudent ratio, education level of teacher and class size are emerged as good predictors of educational facilities than the distance of the educational facilities from the residence.

The developed model suggests that interfamily relations have significant contribution to the QOL. These effects are significant both direct and indirect paths through health. However, it is well documented that more interaction with other families and helping each other improves the QOL. Inter family relations have insignificant influence on the education. This is attributed to lack of educational awareness amongst families.

CONCLUSION

It is evident from the study that exploring alternative economic arrangements should be the primary concern during mine closure planning in the study areas. From the model it was noticed that satisfaction with life in general was confirmed to be significantly predicted by objective factors such as personal income, health, education, service

and facilities, etc. A linear relationship was revealed between objective quality of life status and subjective quality of life satisfaction. Further, identification of proactive factors that influence the

QOL of the communities nearby mining area provides useful information for mine closure planners to minimize the post closure social impacts.

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ORIGINAL ARTICLE

Ethnicity and Deliberate Self-harm

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ABSTRACT

Deliberate self-harm (DSH) is rare but not unknown among pre-school children and becomes increasingly common after the age of 12. Psychological factors and family relationships are important in DSH. The link between psycho social stressors and DSH in immigrants has been reported. Ethnic or trans-cultural differences can have a significant effect on the social support systems, cultural sanctions and role expectations, not only within the narrower community and family set up but also in wider society. The aim of this study was to establish the characteristics of Indian sub-continent origin children and adolescents who self-harm. This case control study based on retrospective case note analysis of children and adolescents presenting to mental health services compared the factors associated with deliberate self-harm among the children from Indian sub-continent (Asian group) and other ethnicities (non-Asian group) within a specified geographical area. Asian children presented as a separate group with differences in associated factors in relation to self –harm. The higher rate of discharge needs more exploration to clarify whether it was the Asian children's and their families attitude towards mental health services or professionals being less trained to provide a culturally sensitive advice to cause the difference.

Keywords : Children and Adolescents (C&A), Cultural factors, Ethnicity, Deliberate self-harm (DSH),Indian sub-continent.

INTRODUCTION

Describing and defining the term Deiberate Self-Harm (DSH) has been attempted by several and carries a lot of overlaps and clear distinctions. Author is using this term as described by Morgan (1979) and includes deliberate self-poisoning and self-injury and where the behaviour was clearly non-accidental without any assumption as to whether the desire for death was present or not.

DSH is rare but not unknown among pre-school children (Rosenthal and Rosenthal 1984) and becomes increasingly common after the age of 12.Estimates of the incidence of DSH in teenagers range widely depending not only on the differences of definitions and samples but also due to the fact that many attempters do not seek professional help and they may be misdiagnosed when they do so[1].The incidence rates are around 1% in children and between 1.7 % to 5.9% in adolescents.DSH is one of the most common causes for presentation to the accident and emergency department [2].C&A accounts for 5% of all episodes referred to hospital because of DSH[3].Research has shown variations in rates of DSH among this age group related with ethnicity[4].

The importance of research data to be routinely stratified by ethnic group has been recognized and now a large number of articles are indexed, each year under the Medline headings "ethnic groups" and racial stocks[5],However only a few studies provide explicit definitions of the terms used to delineate race, culture and ethnic categories[6].It seems they have plural, sometimes ambiguous meanings, overlapping with political concepts of nationality and immigration status and these terms are variously used to describe geographically separated populations, cultural group and nationality. Singh (1997) has defined an ethnic group as a group of persons who share language, customs and a recent common ancestry, while culture involves all shared characteristics of a society, such as social roles,traditions,language,etc.that are transmitted across generations by non-biological means[6].These ethnic or trans-cultural differences in turn can have a significant effect on the social support systems, cultural sanctions and role expectations, not only within the narrower community and family set up but also in wider society.

Controlled studies indicated the importance of psychological factors and family relationships in DSH[7] and that C&A who self-harm differ in terms of psycho social factors like relationship with parents, medical and psychiatric histories and problems at that time . The link between psycho social stressors and DSH in immigrants

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has been reported [8].Therefore impact of immigration on young people[9] also need to be considered while dealing with ethnic minority groups though most young people tend to cope with immigration . The Asian C&A may not only be vulnerable in terms of belonging to an immigrant family but also the differences in child rearing practices between Indian and Western cultures[10] can have a continuous effect of some disparities between their psychosocial environment inside and outside the family. These differences can manifest in many different ways within a multicultural society where people belonging to cultures that may be thousands of years old living side by side with people belonging to culture that are just a few centuries old[11].For example, one important difference is cultural attitude towards children's independence from the family as they grow up. In western cultures children are encouraged to have their own voices, preferrably different from their parents [12] and leaving home is considered to be a very important developmental task for adolescents. In contrast Eastern culture place more emphasis on "dependability".

Research has also indicated differences in representation of young people from ethnic minorities in child psychiatry clinics and they were reported to be under-represented[13]. Due to lack of research in DSH in Asian communities and particularly in C&A while giving importance to all above findings this piece of work was felt of clinical importance and relevance. The aim of this study was to determine the characteristics of C & A from Indian sub-continent who presented with DSH.The hypothesis to be examined was that Asian children show a different pattern of psycho-social stresses and factors associated with DSH episodes including their approach towards further help from professionals.

METHOD

Setting

The Leicestershire Child and Adolescent Mental Health Services (CAMHS) provide input to fewer than 18 year olds. The service operates a 24 hour emergency referral system for C&A who need to be seen immediately, in addition to out-patient appointments. According to the Census 1991, there are about 87,871 children aged 10 to 17 years in this catchment are with a high proportion, i; e 11,252 children (13%) of Asian ethnicity, mainly of the Indian Bangladeshi and Pakistani origin. The Indian children constituted largest group, i; e 11%.

Design

This study is a retrospective case notes analysis of C&A of Asian ethnic origin who were referred as an emergency to CAMHS with DSH ideation or attempt. Cases were consecutively collected over a twenty months period in between January 2000 to August 2001.

Procedure

The case notes were thoroughly examined in a systematic way by using a checklist devised by the author. Information was collected on demographic details, family structure and living arrangements, the circumstances of presentation including reason for referral and factors associated with the DSH episode. Particular focus was given to the psycho-social stresses related with DSH as reported by the young people. These factors were divided into immediate events (events/stresses reported occurring within a week before DSH as precipitating factors) and longer-term events (events/stresses reported as occurring for more than a week duration as predisposing factors).Information was collected about present or past contact with social services or CAMHS, previous episode of DSH, misuse of drugs or alcohol and ICD-10, symptoms of depressive disorder, as well as the out come of initial psychiatric assessment in terms of an agreed management plan and subsequent attendance at CAMHS.

RESULTS

There were a total of 254 emergency referrals made to the service .These included 35 young people (14%) with marked ethnicity from Indian sub-continent based on the family names, as no record of ethnicity was made in bio-data information sheet. The DSH group constituted of 224 referrals (88%) of the total and the Asian origin young people comprised 12.5% of the group (n=28/224).Out of these 28 cases, 8 were excluded as the files were missing. The remaining 20 case notes were compared with 20 case notes from the non-Asian DSH group matched for the nearest time period of presentation to the service (i.e. the next young person referred to the service with DSH).Results were as follows when compared on different parameters:

Table 1. Demographic Data and Living Arrangements

Variables	Asian (n=20)	Non-Asian (no=20)	Total (n=40)
Age (mean years)	15.4	13.9	14.9
Gender (female %)	75	95	85
Main carers(%)			
Parents	100	75	87.5
Social Services	0	25	12.5

The earliest presentation with DSH in Asian children was 13 years as compared to 9 years in the control group. There were more males in Asian (no=5) than in non-Asian children (n=1).All children in Asian group had their parents

as their main carers, while a quarter of the control group were in the care of social services department. About 40% of the Asian C&A were living with an extended family which was not seen in the non-Asian group, however one forth of non-Asian C&A had other living arrangements, for example foster carers or residing in a children's home.

Table 2. Circumstances and Presentation

Variables	Asian (n=20)	Non-Asian (no=20)	Total (n=40)
Reason for referral(%)			
Ideas of DSH	5	25	15
Attempt of DSH	95	75	85
Accompanied (%)			
Children/both parents	75	60	67.5
Other family members	25	0	12.5
Other	0	40	20
Source of Referral (%)			
A & E	60	70	65
Paediatric Ward	40	15	27.5
Other	0	15	7.5

The majority of the cases were referred from the Accident and Emergency Department and Paediatrics ward. A higher proportion of Asian C&A than non-Asian C&A were admitted to the Paediatric ward before being medically fit to be referred to CAMHS.Parents accompanied the majority of children in both groups at the time of presentation, while extended family members also accompanied a quarter of Asian children. Presentation with attempted DSH as compared to ideas of self-harm was higher in Asian children.

Table 3. Significant Past /Present History

Variables	Asian (n=20)	Non-Asian (no=20)	Total (n=40)
History of contact with Social Services (%)	0	50	25
History of contact with CAMHS (%)	20	55	37.5
History of Drug & Alcohol Use (%)			
Present	25	60	42.5
Absent	50	20	35
Not specified	25	20	22.5
Previous DSH (%)	45	55	50
ICD10 symptomatology of depressive illness (%)	50	10	30

There was a higher proportion of either previous or current contact with social services and CAMHS in non-Asian than Asian C&A. More young people in control group admitted misuse of drugs and alcohol, as well as previous DSH. Asian C&A more frequently reported depressive symptomatology with biological symptoms based on ICD-10.

Stress Related Predisposing and Precipitating Factors

The majority of C&A in both groups recognized predisposing and precipitating psycho-social factors related with their DSH episode . About 90% of Asian young people reported an argument as precipitating factor related with their DSH episode, while 85% reported predisposing longer term problems. These frequencies were 75% and 95% respectively in the non-Asian group. The problems recognized as precipitants by Asian group in descending order of frequency were, arguments with extended family members about the young person's peer company (33%), arguments with family about performance at school (28%) and arguments with family about household chores (11%) only in girls. In the control group majority of children (86%) reported arguments with a single family member and only 7% recognized problems with family about school performance as significant precipitant in terms of their DSH episode. In terms of predisposing longer term psycho-social stresses about 75% Asian C&A reported relationship difficulties with their immediate family members i.e. parents or siblings , while 80% of control related it with problems in significant relationships other than immediate family members i.e. girl or boyfriend.

Management Plan and Outcome

The data suggests that a higher proportion of Asian C&A (35%) were discharged from the Accident and Emergency department after initial assessment and were identified as not requiring further help so discharged while discharge rate in the control group was 10%. The percentage of young people from Asian and non-Asian group who failed to attend CAMHS follow-up were nearly the same, around 38.5%. C&A who attended follow-up and completed the offered treatment were also same in both groups.

Statistics

An initial exploratory predictive model of the factors that may be associated with DSH was created by means of Logistic Regression. Using evidence or absence of DSH

as the binary outcome measure factors including ethnicity, age, gender, previous history of DSH, predisposing and precipitating factors and care plan were entered into a Forward: Stepwise model. This indicated no individual predictors to be significant except that care management (particularly discharge with or without further treatment) may be demonstrated to have some predictive value with a larger sample.

DISCUSSION

This is a retrospective study with a relatively small number of cases, therefore carries all the limitations of such research. However few interesting findings emerged and some valid conclusions are possible.

Several studies have shown inception rate of DSH were not different in Asian C&A and their non-Asian counterparts [14,15] which was replicated in this study as well. However failure to establish reduced service use by Asian C&A seems contrary to few studies [13,16] but it was in accordance with others [17]. Asian children showed slightly higher presentation rate in Asian population with comparatively slightly less proportion in DSH group. Therefore presentation to CAMHS and dealing with stigma related to psychiatric services in Asian families need to be explored more with considerations given to parental social class differences and the number of generations after immigration to United Kingdom is required .

Further the well documented research finding of females being significantly over-represented in the DSH group showed less marked difference in this sample as compared to the control native group. There are few assumptions we can make to understand these results. The Asian group also presented at an older age than the control group and was more admitted in the paediatric ward following the DSH which reflects the severity of the nature of attempt and requiring observation/treatment. Research work has shown that Indian male showed higher suicide rate[18, 19.] One can create a hypothesis here that whether this group was more similar in characteristics to adult Asian males or their parents were more tolerant to their children's problems and related stresses and therefore did not ask for help until late and when the problems exceeded to serious DSH to understand this finding but this needs further exploration.

When lower prevalence rate of mental disorders in adolescents in India was compared with other countries, strong family support was found to be a critical factor associated with it[20]. Family support was also apparent finding in this study group and many members of extended family accompanied most young people. On the other hand the cultural norms of Asian families like overriding authority of elders and unquestioned compliance from younger members [21] can be an extra pressure on young person and was reflected in arguments with family members in both predisposing and precipitating factors. A careful assessment is required to explore these factors to look for a healthy balance between these supportive / pressurizing factors in each case and a sensitive discussion with the family members needs to be included in management plans.

The differences of gender related role expectations are already known [21] with females given less freedom to choose a life style of their own choice . In the study group females were found to be expected to be more responsible for household chores. An awareness of this fact and considering the related issues while dealing with DSH in Asian girls is important for professionals involved.

The presence of more ICD-10 based depressive symptomatology and late age of presentation made Asian C&A more high risk group (Royal College of Psychiatrists Council Report), but surprisingly majority were discharged after initial assessment and no further specialist services input was felt important. The possible explanation might adhere to several previous studies suggesting Asian families tends to engage with services but on the contrary these children were not much different in completing the treatment plan when compared with the control group. Perhaps once initial engagement was achieved then this group was not found to be less motivated with their counterparts!

These all questions need more research work and perhaps a prospective study including face to face interviews with young people and their families can give more understanding of the ethnicity related factors in respect to DSH.This information will not only be helpful for the professionals dealing with ethnic minorities but will also extend their therapeutic skills to use some of the culture related strengths in that particular community while treating C&A and their families.

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RULES FOR THE AWARD

Siddhartha Memorial Award
Donated by Dr. Partha Rao

1. All the P.G. students continuing their studies in institutes in the territory under purview of Indian Psychiatric Society, Eastern Zonal Branch will be eligible to compete for the award.
2. The award will be for the best paper presented in the Annual Conference of Indian Psychiatric Society, Eastern Zonal Branch.
3. The intending competitors will have to apply to the Chairman, Awards Sub-committee with certificate of studentship from the concerned H.O.D. and four copies of complete paper by a deadline to be fixed up by the Executive Committee of Indian Psychiatric Society, Eastern Zonal Branch.
4. There will be a minimum gap of 45 days between the last date so fixed up and the corresponding conference.
5. All the four copies of the written text should be typed in double space on one side of paper. The first page of the text should contain only the Title of the paper, Names of the author and authors if any and the place of research. These particulars except the title should not be reflected anywhere else in the paper. The Chairman of the Awards Sub-committee will detach the first page and forward the remaining text to the judges.
6. The evaluation of the papers will be in two parts:
   a. The written text: 75 marks
   b. The oral presentation : 25 marks
7. The evaluation of written text will be by three judges as decided by the awards sub-committee. Each of the judges will evaluate the paper out of 25 marks and communicate the result to the Chairman confidentially. The sum total of the marks awarded by the three judges will form the written text marks in respect of the paper.
8. In theoretical evaluation the relevant review, objectives, methodology, presentation of data and discussion thereon will be adjudged.
9. The best three papers as per evaluation of written text will be considered for oral presentation in the Annual Conference of Indian Psychiatric Society, Eastern Zonal Branch. In case of tie, it will be decided by further comparative evaluation by the Chairman, Awards Sub-Committee.
10. The Chairman, Awards Sub-Committee will communicate to the selected authors about the date and time of presentation under intimation to organizing Secretary of the corresponding Conference.
11. The oral presentation of the selected three papers will be adjudged by three judges appointed for the purpose, by the Chairman, Awards Sub-committee from among those attending the Annual Conference. In case the Chairman, Awards Sub-Committee is not attending the Annual Conference, he can forward the result of written text evaluation confidentially to the Organizing Secretary who would act on his behalf.
12. The Oral presentation has to be made by the author or one of the authors, all of whom must be members of IPS, Eastern Zonal Branch. Time allowed for presentation will be 8 minutes to be followed by 2 minutes for discussion.
13. All the three judges of oral presentation will evaluate out of a total of 25 marks and the average will be taken for consideration. The awardee will be decided on the basis of total of written and oral evaluation.
14. All the papers so presented will be eligible for BPSS Award but for this only the evaluation of Oral presentation will be considered.

ORIGINAL ARTICLE

A Comparative Study of Liver Function Test in a Group of Persons with Alcohol Dependence Disorder

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ABSTRACT

Alcohol related diseases affect 5-10% of the world's population each year. Medical illness is a common consequence of heavy drinking. Chronic and excessive alcohol ingestion is one of the major causes of liver diseases. Laboratory testing can assist the clinician in providing objective, non-judgmental feedback to alcoholic patients on negative physical consequences of excessive drinking. Laboratory testing can also assist the clinician in providing objective, non-judgmental feedback to alcoholic patients on negative physical consequences of excessive drinking. This purposive cross sectional study aims to compare the values of hepatic enzymes along with total protein in a group of chronic alcoholics and a matched controlled group. 25 individuals fulfilling ICD-10 criteria for alcohol dependence syndrome were recruited and were applied AUDIT. The values of the hepatic enzymes were significantly raised along with reversal of the albumin globulin ratio in majority of the cases. Multiple physical problems were also observed in the study group.

Key Words : alcohol dependence, AUDIT, Liver function test, fatty liver, cirrhosis

INTRODUCTION

According to the 1993 World Development Report, alcohol related diseases affect 5-10% of the world's population each year, and accounts for approximately 3% of the global burden of disease in 1990(Desjarlais et al 1995). The global burden of disease and injury attributable to alcohol use in 1990 are summarised in table1 (Murray and Lopez 1996).

Although the data represented in the table is less alarming than the global problem of alcohol that exists elsewhere, India has been seeing an increase in alcohol related problems. Our country has limitations in proper and uniform data in different aspects of alcohol use. Premrajan et al 1993 reported of prevalence of alcohol dependence disorder in 66.2 per thousand male in our country in an urban population.

Medical illness is a common consequence of heavy drinking[1]. No organ is immune to the effect of alcohol. In central nervous system, long term alcohol use can cause cognitive disturbances, sleep apnoea, REM sleep disorders, Warnicke-Korsakoff's syndrome, cerebellar degeneration, peripheral neuropathy and emotional problems. Alcohol causes oesophagitis, gastritis, pancreatitis and G.I bleeding. Mallory Weiss Syndrome is particularly important. Alcohol increases risk of cancers, particularly GI cancers, pancreatic cancer and breast cancer. Anaemia, increase in mean corpuscular volume (MCV), reticulocytopenia and hyperplastic bone marrow has been associated with chronic alcohol misuse. Heavy drinkers have increased risk of hypertension and chronic heavy drinkers are reported to have six-fold increased risk for coronary artery disease as well as increased risk of cardiomyopathy. Holiday Heart syndrome and different types of arrhythmias are reported to be associated with alcoholism. Chronic alcohol use has been reported to be related with testicular atrophy in males and decrease in ovarian size along with infertility in case of females. Alcohol use during pregnancy may lead to

Table 1. Global Burden of Disease attributable to Alcohol and other Drugs

Region	Deaths (1000's)	% of total deaths	Years of life lost (1000's)	% of total years of life lost	Years of life disabled (1000's)	% of total years of life disabled	Disa Adj life (DA (10
World	773.6	1.5	19 287	2.1	28 400	6.0	47 6
INDIA	112.9	1.2	2 723	1.4	1 974	2.3	4 69
Established Market Economies	83.8	1.2	2 537	5.1	7 667	15.6	10 2

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Fetal Alcohol Syndrome. Repeated heavy drinking is seen leading to change in calcium metabolism, low bone density, osteonecrosis, decrease in growth of epiphysis and thus increased risk of fractures. Persistent cortisolemia and change in vasopressin secretion keeps the alcoholics slightly over –hydrated. Moreover thyroid hormone levels are also altered. [2]

Arif and Westermeyer 1988 reported of some non specific health problems like malnutrition, muscle wasting, neuritis, vitamin deficiencies, infectious diseases (e.g. tuberculosis,dermatitis, pediculosis and hepatitis) and trauma secondary to fights and accidents associated with alcoholism.

Chronic and excessive alcohol ingestion is one of the major causes of liver disease. The pathology of alcoholic liver injury comprises three major lesions rarely existing in a pure form: (i) Fatty liver (ii) Alcoholic hepatitis (iii) Cirrhosis. Fatty liver is present in over 90% of binge and chronic drinkers. A much smaller percentage of heavy drinkers will progress to alcoholic hepatitis, thought to be a precursor to cirrhosis. The prognosis of severe alcoholic liver disease is dismal; the mortality of patient with alcoholic hepatitis concurrent with cirrhosis is nearly 60% at 4 years. Although alcohol is a direct hepatotoxin only 10-20% develops alcoholic hepatitis. The explanation for this paradox is unclear but involves the interaction of facilitating and co-morbid factors such as gender, heredity, infection and immunity etc.[3]

Alcohol consumption over 80 gms per day in male and 40 gms per day in female for more than 10 years have a significant risk for developing cirrhosis.[4]

Table 2. Alcohol Equivalent

Whisky	30ml	10gms
Wine	100ml	10gms
Beer	250ml	10gms

(Source: Sherlock S, Dooley J, Diseases of The Liver and Biliary System, 9th Ed. Pg 371.)

Alcohol can neither be stored nor excreted and hence has to be metabolised. A healthy individual cannot metabolise more than 160-180 grams per day and one gram of alcohol provides seven calories which is of poor nutritional quality.[5]

The metabolism of alcohol occurs by three pathways- Alcohol dehydrogenase (ADH) in cytosol, microsomal ethanol oxidising system (MEOS) involving the enzyme Cyp.2E1 and catalase in peroxisomes.[6] During the oxidation of alcohol to acetaldehyde the NADH: NAD ratio is reversed. Accumulation of NADH inhibits neoglucogenesis by preventing oxidation of lactate to pyruvate. Consequently lactic acidosis and hypoglycemia are seen with excess alcohol use. Accumulation of NADH also stimulates fatty acid synthesis producing accumulation of tri-acylglycerol in hepatocytes resulting in fatty changes. Acetic acid produced from acetaldehyde with aldehyde dehydrogenase act as substrate for the above reaction. The change in redox state of liver inhibits protein synthesis and stimulates lipid peroxidation.[7] The microsomal oxidising system converts NADP to NADP+ by oxidising alcohol to acetic acid. This produces free radicals. The catalase system is not significant but it may become significant if higher concentration of hydrogen peroxide becomes available through beta oxidation of fatty acids in peroxisome.

Patients experiencing alcohol related disorders are typically reluctant to seek help or tend to under report the frequency and intensity of their drinking. Diagnostic laboratory markers can help to detect individuals who deny or minimize their alcohol consumption. Laboratory testing can help to resolve diagnostic dilemmas among patients whose self report information and physical findings are inconclusive.[8]

Laboratory testing can also assist the clinician in providing objective, non-judgmental feedback to alcoholic patients on negative physical consequences of excessive drinking. Graphical representation of the repeated laboratory findings help the patients comprehend better about their problem. These allows the patient to appreciate the declining and eventual stabilization of laboratory indices thereby enhancing his/her motivation to maintain sobriety.[9] Laboratory tests can also help detecting relapse and thus can prevent the reinstatement of alcohol dependence. Moreover, they can be used to evaluate effectiveness of specific therapeutic interventions.[8]

Liver function tests are easy to perform and are used often to assess the impact of alcohol on liver. The various liver function tests can be grouped based on its principal functions are enumerated below –

(i) Tests based on EXCRETORY function : measurement of bile salt/bile pigment, urbilinogen, stercobilinogen in blood and urine.

(ii) Tests based on serum ENZYMES : determination of transaminases (AST/SGOT, ALT/SGPT), alkaline phosphatase, gamma glutamyl transpeptidase (GGTP), 5´- nucleotidase, lactate dehydrogenase, iso-citrate dehydrogenase etc.

(iii) Tests based on SYNTHETIC function : prothrombin time, albumin , globulin, alpha feto-protein , plasma fibrinogen etc.

(iv) Tests based on METABOLIC capacity: Glucose Tolerance tests, fructose tolerance tests, anti-pyrine breath tests, plasma amino acid, ammonia, glutamine

in CSF etc.

(v) Tests based on DETOXIFICATION: hippuric acid synthetase tests.

The present study aims to compare the values of hepatic enzymes namely AST, ALT, Alkaline phosphatase, GGTP along with total protein in a group of chronic alcoholics and a matched controlled group. It also aims to explore into various aspects of nature of intake of alcohol along with determination of some specific somatic symptoms.

MATERIALS AND METHOD

This is a cross sectional study done at tertiary care hospital having the facility for deaddiction. The study sample comprised of 25 individuals fulfilling the inclusion criteria. These individuals fulfilled the criteria for alcohol dependence disorder as per ICD- 10 clinical guidelines.

Inclusion criteria:

1) A diagnosis of alcohol dependence disorder as per ICD -10 guidelines.
2) A score of 15 or more and 13 or more in The Alcohol Use Disorder Identification Test (AUDIT) questionnaire in case of male and female respectively.
3) Patients treated as inpatient for deaddiction.
4) Informed consent.

Exclusion criteria:

1) Presence of co-morbid psychiatric conditions.
2) Presence of co-morbid substance misuse disorder other than alcohol.
3) Known chronic medical illness involving respiratory, cardiovascular, central nervous system which needs regular intake of medicine for last 6 months.
4) Any known malignant condition.
5) Persons receiving any medications for last 6 months regularly for any illness.

Control Group :

25 people of similar socio-demographic profile were selected with their consent. Secrecy about their identity kept intact. These people did not have any intake of alcohol during last 1 year. A careful screening was done to exclude any serious medical conditions with a semistructured proforma. Candidates fulfilling the exclusion criteria for the test group were exempted.

Purposive samples were collected on simple random basis. After clinical evaluation along with the socio-demographic profile, fasting blood samples were collected using standard aseptic measures using 5 ml disposable syringes with hypodermic needles. The collected blood was kept in a stoppered vial for 30-45 minutes and allowed to clot. The serum thus collected was centrifuged at 3000 rpm for 3 minutes in a clinical centrifuge machine. The serum was used to measure alanine aminotransferase (ALT/SGPT), aspartate aminotransferase (AST/SGOT), total protein and fractions, total bilurubin and fractions , alkaline phosphatase, gamma-glutamyl transpeptidase/ transferase , fasting blood sugar, serum creatinine and blood urea using standard procedures. Value thus obtained were analysed using parametric statistical methods.

Tools :

1) A semi structured proforma for collecting socio-demographic variables.
2) A semi-structured schedule with points favouring the exclusion criteria and special enquiries in relation to alcohol use like duration of use, amount taken, type of beverage along with frequency and nature of intake.
3) ICD-10 criteria for clinical description and diagnosis guidelines: International classification of diseases and related health problems, 10th revision is the current diagnostic guideline for diagnosing the health problems across the globe adopted by the World Health Organisation. The chapter V (F) is related to behavioural problems.
4) Alcohol Use Disorder Identification Test, AUDIT[10]: It is a 10 item screening tool. It covers the domain of alcohol consumption, symptoms of alcohol dependence and alcohol related consequences. A score of 8 or more is associated with harmful or hazardous drinking, a score of 13 or more in women, and 15 or more in men is likely to indicate alcohol dependence. It has been shown to be sensitive and specific. It has been found superior to Michigan Alcohol Screening Test (MAST) in identifying hazardous drinkers, that is , those heavy drinkers who have not yet experienced serious harm from their drinking.[11]

RESULTS

Both the Study and Control groups contain 25 persons. The Socio-Demographic characteristics are shown in Table3. They are matched appropriately. The mean age of the two groups do not differ significantly(Table 4). 84% of the patients with alcohol dependence had poor appetite, while 60% had decreased sleep. Generalized weakness is also a very common feature (Table 5).

Fasting blood sugar level, serum creatinine and blood urea in the two groups were comparable and no significant association was observed with intake of alcohol with these parameters(Table 6).

The mean value of AST, ALT, ALP differed significantly in the said two groups. The persons with alcohol dependence had higher values of the hepatic enzymes, and significant associations were observed. The mean total protein in the study and control groups was 6.73±0.14 and 7.0±0.85 respectively. The persons with alcohol dependence had significantly lower value of serum albumin. The mean GGT value in the study group was

Table 3. Socio-Demographic Variables

		Study group	Control Group
Sex	Male	23	21
	Female	2	4
Locality	Rural	11	10
	Urban	14	15
Education	Primary	4	3
	High School	9	7
	Matriculate	5	5
	Graduate	7	10
S/E status	Low	3	2
	Lower middle	11	9
	Upper middle	8	8
	High	3	6
Occupation	Unskilled	5	2
	Skilled	5	7
	Job	10	10
	Self-employed	5	6
Family type	Nuclear	18	20
	Joint	7	5

322.48±48.89 (Table 7), and 68% had AST: ALT ratio more than 1 (figure 1).

In the study group, we got mean alcohol intake per day 89.48 gms/day±5.54 gms/day and a mean year of use of alcohol was 19.2±1.47 year. 36% of the cases took country liquor while 32% each took foreign liquor and mixed type.

DISCUSSION

Of the 25 persons with alcohol dependence disorder, 8% were female. Lesieur et al 1993 reported that women are more likely to abstain from alcohol, and if they do drink, they are more likely to consume lesser amount. It may be due to cultural factors along with some special biological factors. It is comparable to a recent study.[12] 56% of the persons were found from urban background whereas 84% had education more than primary education. 48% of the persons who sought for deaddiction were matriculate. Thus the problem of Alcohol Dependence Disorder is widespread and is of similar distribution among rural and urban population. [12] Education may be a factor related for seeking treatment in case of a person with alcohol dependence disorder. In our study we did not find any relation between habit of taking alcohol and occupation.

We got 56% of the persons were from lower socio-economic status. But the difference was not significant.

Table 4. Age Distribution

Age Group	Study group (N-25) Frequency (Mean in yrs)	Control Group (N-25) Frequency (Mean in yrs)
21- 30	4	3
31-40	6	5
41-50	13 (44.04 ± 1.89)	11 (41.84 ±1.74)
51-60	1	5
61-70	1	1
	t=0.86 df=48	p>0.05

Table 5. Special Symptoms and signs in the Study Group

SYMPTOMS	No.of subjects	Percentage
Loss of Weight	8	32
Loss of Appetite	21	84
Decreased Sleep	15	60
Jaundice/Icterus	9	36
GI Bleed	2	8
Loss Of Libido	10	40
Generalised Weakness	17	68
Swelling of Legs	6	24
Swelling Of Abdomen	5	20
Pain Abdomen	10	40
Anaemia	9	36
Hepatomegaly	8	32

In a recent study conducted by WHO in collaboration with NIMHANS in Karnataka, rural areas with tribal population were found to have higher prevalence[12]. Since it is a hospital based study, the differences can be understood. 72% subjects were from nuclear family. It is an interesting finding. Due to westernization of Indian society, the joint families have broken up. So the new set of family norms have set up in modern India and old cultural values are being ignored day by day. Respect for seniors and fear of dishonour from juniors in a joint family may act as protective factors against alcohol taking

Table 6. Serum sugar, creatinine and blood urea in both groups

	Study Gr (Mean)	Control Gr (Mean)	t	df	p
FBS	91.72±2.44	97.4±2.73	1.55	48	p>0.05
Serum Creatinine	1.7±0.2	0.92±0.03	1.3	48	p>0.05
Blood Urea	29.52±3.02	28±1.17	0.47	48	p>0.05

Table 7. Liver function parameters in both groups

Parameters	Study	Control	t	df	p
ALT	122.88±33.9	33.72±1.8	2.67	48	p<0.05
AST	187.16±73.1	30±1.5	2.14	48	p<0.05
Total Protein	6.73±0.24	7.0±0.85	1.67	48	p>0.05
Albumin	3.22±0.17	4.08±0.08	4.49	48	p<0.001
Total Bilirubin	1.33±0.2	0.59±0.05	3.52	48	p<0.01
Direct Bilirubin	0.47±0.09	0.23±0.04	2.38	48	p<0.05
Alkaline Phosphatase	178.92±15.57	84.48±2.58	5.98	48	p<0.001
GGT	322.48±48.89	39.6±1.82	5.78	48	p<0.001

behaviour.

Global Status Report on Alcohol Reports that the per capita consumption of alcohol in India is 0.2litres per person per year (WHO 1999). But the recent study in Karnataka by WHO in collaboration with NIMHANS reports a much higher value as it has also taken the undocumented beverages under account. In the present study we got mean alcohol intake per day to be 89.48gm/day. This is a rough value as it is difficult to standardise the local alcoholic beverages. But an intake of alcohol more than 100gms/ day has been associated with cirrhosis of liver[13].Country liquors were used more than the Indian made foreign liquors in the present study. It is consistent with other findings[12]. This may be due to lower price and wider availability. The mean duration of intake for the study group is 19.2years. It is a significant finding as it shows that the persons are developing alcohol dependence at an earlier age as compared with earlier studies[14]. People have started to consume alcohol in their early twenties[12].

84% subjects complained of loss of appetite while only 8 % reported of gastrointestinal bleeding. 20% subjects had ascites. 40% had complained of abdominal pain and also loss of libido. High existence of physical problems bears a significant cost. Symptoms like poor sexual performance may lead to marital disharmony and it may have psychological consequences in the spouse. In a deaddiction programme due importance to the physical problems are of utmost importance as these have direct implication on motivation. In the survey done by WHO and NIMHANS, a very low prevalence of physical problem existed in the group of alcoholics. They have found significant relationship of heavy drinking style with abdominal pain, headache, pain syndromes and visual problems[12]. This may be explained by the design of the study and nature of the samples included in the respective studies. They have not found any significant relationship with the type of drink i.e IMFL and country liquor with these physical problems. That means all type of alcohol is physically hazardous.

In the current study we have not found any significant difference in the fasting blood sugar, serum creatinine and blood urea in both the groups. An increased level of serum creatinine, if present is an ominous sign, since it frequently predicts the onset of hepato-renal syndrome[15]. These

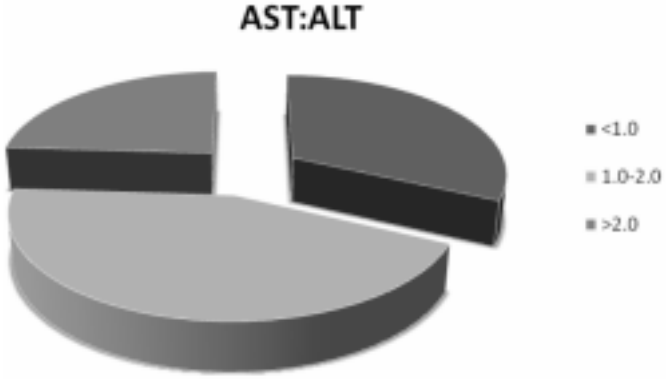

Figure 1. AST: ALT ratio

values are of importance for its therapeutic applications in deaddiction treatment as many drugs tend to have impact on these values. As we had excluded the chronic medical conditions from the study group, so normal values in these tests were expected.

The transaminase levels namely AST and ALT are increased significantly in the study group. Both the parameters passed the normality test in the two groups. ALT is more liver specific and rises in hepatic parenchymal disease. But in case of chronic alcoholic patient the relative rise in AST is higher than that of ALT. In our study we found AST: ALT ratio to be 0.89 and 1.59 in the control and test group respectively. From figure 1 , we get that 8 persons had a ratio of AST:ALT less than 1, 11 patients had in between 1.0-2.0 and 6 persons had a ratio of more than 2 in the test group. An AST level

more than twice ALT level had been reported in as many as 83% of patients hospitalised for alcoholic hepatitis[16, 17]. Zhon et al 1998 reported that ethanol significantly up regulates the expression and export of AST in Hep G2 cells[18]. Sorbi Et al 1999, in a study with 70 subjects each with alcoholic hepatitis and non-alcoholic steato-hepatitis (NASH) reported that a AST:ALT ratio of less than or equal to1 will correspond to a specificity and positive predictive value of 100% at an expense of a sensitivity of 80%. While an increase in the ratio to 1.3 would maximise the sensitivity as well specificity and positive predictive value[19]. Our finding goes in accordance. Depletion of pyridoxal -5-phosphate, is postulated to be the underlying mechanism for this increased AST:ALT ratio[20,21].

The total protein of plasma is a mixture of simple proteins and conjugated proteins like glycoproteins, lipoproteins and immunoglobulins. All plasma proteins except immunoglobulins are synthesised in the liver. The serum albumin is an index of severity and prognosis in patients with chronic hepatic disease. In the present study, we got a mean serum protein of 6.73 ± 0.14 gm/dl and 7.0 ± 0.85 gm/dl in the test and control group respectively. In the control group the distribution was normal but in the test group it was skewed towards right. Hence in the present study we did not find any significant difference in the serum protein levels in the two groups but when normality tests is cleared for the test group, a significantly decreased mean value is found in the test group. Moreover the mean value of albumin in the two groups where 3.22 ± 1.77 & 4.08 ± 0.08 gm/dl for the test and control group respectively. The difference was found to be statistically significant. The albumin and globulin ratio was 0.95 and 1.42 in the test and control group respectively. In the control group no sample had less than 1 ratio. So we get an alteration of the albumin globulin ratio in the test group. Similar findings have been reported in a study done by Dunn et al 2006[22]. They proposed a model for diagnosing alcoholic basis for steatohepatitis thus differentiating alcoholic liver disease from non-alcoholic steatohepatitis by an index called Alcoholic Non alcoholic steatohepatitis index (ANI).[22]

Bilirubin concentration can be increased in blood due to increased production, decreased uptake by liver, deceased conjugation, decreased secretion by liver or blockage of bile duct. In case of increased production, decreased uptake by liver or decreased conjugation, the unconjugated or indirect bilirubin is primarily elevated. In case of alcohol many mechanism may be implicated, for example, increased production due to megaloblastic anaemia, decreased conjugation due to primary liver disease or decreased secretion from narrowing of the bile canaliculi. The samples in the test group had significant higher mean value of both total bilirubin and its fraction in comparison to that of the samples in the control group. Similar increased value has been reported by Huang et al 1996[23]. They have found that interleukin – 8 (IL-8) has a weak positive correlation with the serum bilirubin level. High value of IL-8, IL-6 and TNF-a may have poor prognostic value.[23]

Elevation in alkaline phosphatase level which originate primarily from two sources, liver and bone [24]. Elevated alkaline phosphatase level along with elevation of either of 5'-nucleotidase or g-glutamyl transferase point towards a hepatobiliary origin[25]. In the present study we observed significant increase in alkaline phosphatase level in the test group as compared to that of control. Similar findings have been reported by Dunn et al 2006[22]. Due to lack of specificity there is relative scarcity of association of alkaline phosphatase level with alcoholic liver disease as compared with that of other hepatic enzymes.

Elevated levels of g-glutamyl transferase levels are seen in wide variety of clinical conditions including hepato-pancreato-biliary disease, myocardial infarction, renal failure, chronic obstructive pulmonary disease, diabetes and alcoholism[26]. It has been increased in persons taking anti-convulsants like phenytoin and barbiturates[27]. We observed a very significant rise in the level of GGT in the study. It goes in accordance of the previous findings. Results of the WHO/ISBRA collaborative project demonstrated that serum GGT is increased in 52% of alcohol dependant subjects, in 28% of heavy drinkers, in 15% of light/moderate drinkers and in 10% of non-drinkers[28]. Elevated GGT is an early indicator of liver disease. Heavy alcohol intake induces a rise in serum GGT levels that return to the reference range after 20-30 days of abstinence. Increased serum GGT is a sensitive marker (60-90%) for the diagnosis of alcohol induced damage but only if associated with other markers of alcohol misuse and when biliary stasis is excluded[29]. Again Rosalki et al 1984 reported that GGT is more likely to be elevated in regular drinkers as compared to the episodic drinkers.

Psychiatrist should be able to diagnose active hepatic pathology in the patients attending deaddiction clinics and should not hesitate to take help from the hepatologist whenever needed. The biochemical profile and the radiological evidences give us many clues about the hepatic status of the patient. Usually the combination of elevated AST (but <300 IU/ml) and AST:ALT>2, a total serum bilirubin level of more than 5mg/dl (86 ìmol/l), an elevated INR, and neutrophillia in a patient with ascites and history of heavy alcohol use is indicative of alcoholic hepatitis until proven otherwise.[30] Various scoring systems have been used to assess the severity of alcoholic hepatitis to guide the treatment protocol. Maddreys Discriminant

Function, The Glasgow Score and the score on Model for End Stage Liver Disease (MELD), help the clinician whether to initiate corticosteroid or not, whereas Lilles score help in deciding about termination of corticosteroid therapy after 1 week[30]. Forest et al 2007 reported that patients with a Maddreys Discriminant Function of 32 or more and a Glasgow alcoholic hepatitis score of 9 or more who were treated with corticosteroid had an 84day survival rate of 59%, as compared with 38% survival rate among untreated patients.[31]

Thus the present findings have significant implications in total management of a person with alcohol dependence. The main limitation of the present study is that it a cross-sectional study having lower sample size. Moreover correlation of the different enzyme levels with the pattern of alcohol intake and the AUDIT score would have been more informative. Still our study has got the strength of extensive light on the biochemical profiles of the patients with alcohol dependence disorder.

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ORIGINAL ARTICLE

Culture and Somatization: A Psycho Social Perspective

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ABSTRACT

Culture shapes the perception and expression of distress .The occurrence of somatization varies across socio cultural groups and seems to be influenced by psychosocial factors. The study was conducted on somatization patients selected from outpatient unit of LGB Regional Institute of Mental Health, Tezpur, Assam. The data was collected in a period of three months from September to November, 2008. Subjects fulfilling the criteria of the study were evaluated for socio demographic variables and clinical presentation on semi structured proforma and thereafter the Bradford Somatic Inventory [1], Satisfaction with Life Scale [2] , Multidimensional Scale of Perceived Social Support [3] ,WHO Wellbeing Index (1998) [4] and Perceived Stress Scale [5] were administered. Women have consistently been shown to report more somatic symptoms than men. Perceived social supports and perceived stress was found to have a significant positive correlation with life satisfaction. Wellbeing was found to be poor in the most of the patients and was found to have a significant positive correlation with perceived stress. Somatization is common in all ethno cultural groups and societies studied to date. The importance of demographics, psychosocial functioning, perceived stress, availability of social support was emphasized in the explanation of somatization tendencies among the subjects in the present study.

Key words: Culture and Somatization

INTRODUCTION

Culture and society plays a pivotal role in mental health, mental illness, and mental health services. Understanding the wide-ranging roles of culture and society enables the mental health field to design and deliver services that are more responsive to the needs of racial and ethnic minorities. Culture is broadly defined as a common heritage or set of beliefs, norms, and values [6]. It refers to the shared attributes of one group. Anthropologists often describe culture as a system of shared meanings. Cultural and social factors contribute to the causation of mental illness and it varies by disorder. Mental illness is considered the product of a complex interaction among biological, psychological, social, and cultural factors. The role of any of these major factors can be stronger or weaker depending on the specific disorder. The term "somatization" describes a presentation to communicate psychological distress in the form of physical symptoms. Somatic symptoms often occur in reaction to stressful situations and are not considered abnormal if they occur sporadically. Some individuals, however, experience continuing somatic symptoms, attribute them to physical illness in spite of the absence of medical findings, and seek medical care for them. Somatization may also co - exist with a medical disease, but when it does, the symptoms are out of proportion to the demonstrable medical findings. In the literature of medical sociology and anthropology, the term has been used to describe a pattern of illness behaviour, especially a style of clinical presentation, in which somatic symptoms are presented to the exclusion or eclipse of emotional distress and social problems [7] .

Recent research, however, suggests that somatization is ubiquitous — although its prevalence and specific features vary considerably across cultures, the processes of focusing on, amplifying, and clinically presenting somatic distress are universal and somatic symptoms are the most common clinical expression of emotional distress worldwide[8,9]. Epidemiological studies have used measures of somatization that are insensitive to culture-specific symptoms and modes of expressing distress. Kirmayer and Sartorius (2007)[10] examined evidence that cultural and personal explanatory models can contribute to the pathogenesis, symptomatology, and chronicity of medically unexplained symptoms and functional somatic syndromes.

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In the contemporary world, culture involves flow of information, roles, and institutions that offer individuals multiple models for understanding illness. Beiser and Fleming (1986)[11] suggest that Southeast Asians are more likely to consider somatic symptoms rather than depressive feelings as legitimate reasons for consulting a physician. Samples from Southeast Asian clinics composed of depressed patients in the community but who also suffered concurrently from prominent somatic symptoms. An individual's report of bodily symptoms can be understood as encoding cultural models of sickness or idioms of distress. These cultural models supply individuals with a 'vocabulary' of symptoms; more than this, they also provide explanations for these symptoms and the associated suffering. As a culturally available idiom, somatic symptoms express discomfort and distress in ways that are intelligible within the individual's social milieu but may have different meanings to outsiders.

Somatization is a prevalent problem among individuals in cross-cultural transition and is associated with psychological distress; demographic characteristics such as gender, age, marital status, and duration of immigration; self-reported health problems; and immigrants' help-seeking behavior .Previous studies have suggested that the somatization phenomenon is influenced by demographic variables, such as gender, age, marital status, low educational and economic levels, rural residence, and minority ethnicity[12, 13, 14] .Medical help-seeking in many cultures is organized around the presentation of bodily complaints rather than explicit mention of emotional disturbance or family conflict[15] . Thus the present study is aimed at assessing psychosocial functioning of the individuals with somatization. The study proposes to assess the social support, life satisfaction perceived stress and general wellbeing in individuals with somatization .It will further investigate the relationship between social support, life satisfaction and general wellbeing in individuals with somatization.

Aim and objective

To investigate symptom presentation of individuals with somatization

To assess the psychosocial functioning of individuals with somatization

To asses social support, life satisfaction and general wellbeing in individuals with somatization

To assess the perceived stress in individuals with somatization

To investigate the relationship between social support, life satisfaction and general wellbeing in individuals with somatization

MATERIALS AND METHOD

The study was conducted on somatization patients selected from outpatient unit of LGB Regional Institute of Mental Health, Tezpur, Assam. The data was collected in a period of three months from September to November 2008. Samples of 63 subjects were selected.

Inclusion criteria

Subjects of both gender of age range between the 18 to 60 years and fulfilling the criteria of somatization disorder according to ICD 10 were included.

Exclusion criteria

Patients with any organic involvement, mental retardation, epilepsy and with co morbid mental disorder were excluded.

Tools used

1. Semi-structured clinical and socio-demographic data sheet
2. The Bradford Somatic Inventory[1]
3. Satisfaction with Life Scale[2]
4. Multidimensional Scale of Perceived Social Support[3]
5. WHO (Five) Well-Being Index (1998 version)[4]
6. Perceived Stress Scale[5]

Procedure

Informed consent was taken from the patient as well as from the informant before eliciting relevant information and the nature and purpose of the study was explained. All the subjects were interviewed and were then assessed with the help of semi-structured clinical and socio-demographic data sheet .Thereafter, the Bradford Somatic Inventory[1] , Satisfaction with life scale[2] Multidimensional Scale of Perceived Social Support [3] (HO Wellbeing Index (1998) [4] and Perceived Stress Scale[5] were administered.

Analysis of data

The statistical package for social sciences (SPSS), version 14.0 was used for the analysis of the data of this study.

RESULT

The socio demographic characteristics of the subjects are summarized in table 1.Majority of the patients were female (93.7%), Muslim (93.7%), married (90.5%), illiterates (87.3%), house wife by occupation (93%), hailing from rural background (84 %) and belonging to nuclear family (66%). Majority of the patients were having income below 3000 (58.7%). Family history of mental illness was absent in the majority of the patients (93%).The mean age of patients was 42.4 years and duration of illness was found to be 3.8 year (table 2). Majority of the patients believe tension/stress (57.1) as the causation of their illness (table 4). The prominent symptom reported were severe headache (100 %) weakness (98%) , abdominal ache(84%)

Table 1. Socio demographic profile of the entire sample

Variables		Subject N=63	χ^2	df	p
Gender	Male	4	48.01	1	.000
	Female	59			S
Education	Illiterate	55	83.24	2	.000
	Primary	1			
	Secondary	7			S
Marital status	Married	57	41.28	1	.000
	Widow	6			S
Occupation	Household	59	51.57	1	.000
	Agriculture	4			S
Occupation of Spouses	Daily labour	18	29.77	4	.000
	Rickshaw puller	26			
	Agriculture	12			S
	Housewife	3			
	Driver	4			
Religion	Muslim	59	48.01	1	.000
	Hindu	4			S
Domicile	Rural	53	73.23	2	.000
	Urban	4			
	Semi urban	6			S
Family type	Nuclear	42	7.00	1	.008
	Joint	21			NS
Monthly Income	Below 3000	37			
	3000-6000	23	27.81	2	.000
	6000-9000	3			S

NS= non significant, S=Significant, df=degree of freedom

Table 4. Causations of the illness

Variable	Subject (n=63)	χ2	df	p
Magical explanation	3	26.57	2	.000
Stress / tension	36			S
No reason	24			

Table 2. Age and duration of illness

Variable	Mean	Std. Deviation
Age	42.4	5.9
Dur of illness	3.8	1.4

Table 3. Relative frequency of symptoms

	The Bradford Somatic Inventory (BSI) Symptom	Subject (n=63)	(%)
1	Severe headache	63	100
2	Stomach fluttering	25	39
3	Neck pain or tension	46	73
4	Skin burning	21	33
5	Head constriction	43	68
6	Chest pain	23	36
7	Dry mouth	32	50
8	Misty vision	35	55
9	Stomach burning	50	79
10	Weakness	62	98
11	Head hot or burning	35	55
12	Sweating a lot	33	52
13	Chest pressure	27	42
14	Abdominal ache	53	84
15	Choking sensation	22	34
16	Hands or feet pins and needles	53	84
17	Total body ache and pains	41	65
18	Heat inside the body	54	85
19	Palpitation	54	85
20	Eyes painful or burning	54	85
21	Indigestion	49	77
22	Trembling and shaking	46	73
23	Urine frequency	14	22
24	Low back trouble	42	66
25	Stomach swollen or bloated	49	77
26	Head heavy	48	76
27	Tired all the time	48	76
28	Leg pain	36	57
29	Nausea	36	57
30	Head about to burst	40	77
31	Breathing difficulty	14	22
32	Tingling all over	37	58
33	Constipation	44	69
34	Bowel frequency	16	25
35	Palms sweating	31	49
36	Throat lump	15	23
37	Giddy or dizzy	56	88
38	Bitter taste	27	42
39	Whole body heavy	42	66
40	Urine burning	35	55
41	Buzzing in ears or head	27	42
42	Heart weak or sinking	25	38
43	Excessive winds or gas	28	44
44	Hands or feet cold	22	34

, hands or feet pins and needles (84%), heat inside the body (85 %), eyes painful or burning (85%), palpitation (85%), giddy or dizzy (88 %), head about to burst (77%), neck pain or tension (73%), stomach burning (79%), tired all the time (76 %)(table 3). Most of the patients have taken various modes of treatment consisting of doctors (77%) followed by homeopathy (46%), prayers (42%), Ayurvedic treatment (22%) and psychiatrist (16%) prior to coming to LGB Regional Institute of Mental Health (table 5). Most of them found no improvement in their help seeking experience or on prior treatment (table 6). Family perceived social supports were high for patients, when compared to that of others areas of perceived social support (Societal perceived social support and Friends perceived social support) (table 7). In satisfaction with

Table 5. Mode of treatment prior to attending LGBRIMH

Variable	Subject (n=63) n(%)
Prayers	27 (42.9)
Doctors /physicians	49 (77.8)
Psychiatrist	12 (19)
Faith healing	11 (17.5)
Homeopathy	29 (46)
Ayur Vedic Medication	14 (22.2)
Meditation	1 (1.6)

Table 6. Experience of help seeking

Variables	Subject (n=63)	χ^2	df	p
Improvement in symptom	11	12.87	3	.005
Deterioration in symptom	13			S
No improvement	28			
Static	11			

Table 7. Mean and SD of areas of Perceived Social Support

Variables	Mean	S. D.
Family perceived social support	12.82	4.65
Societal perceived social support	9.39	4.320
Friends perceived social support	5.36	1.40

Table 8. Life satisfaction in the individuals with somatization

Life satisfaction	Subject (N=63) n (%)
Extremely satisfied	4 (6)
Satisfied	09 (1)
Slightly Satisfied	26 (41)
Neutral	03 (4)
Slightly dissatisfied	15 (23)
Dissatisfied	06 (9)
Extremely Dissatisfied	-

Table 10. Wellbeing in individual with somatization

Wellbeing (N=63)	Subject n(%)
Poor wellbeing	56(88.8)
Good wellbeing	7(11.1)

Table 11. Relationship between Wellbeing, Perceived Social Supports, Life satisfaction and Perceived Stress

Variable	Perceived social support	Life satisfaction	Perceived stress
Wellbeing	.031	.091	.332**

**P<0.001

life scale most of them were slightly satisfied (41%) with their life (table 8) and Perceived social support and Perceived stress has a significant positive correlation with life satisfaction at 0.01 level (table 9). Well being of somatization patients was found to be poor in most of the patients (88%) (table10) and well being was found to have significant positive correlation with Perceived stress at 0.01 levels was found (table 11).

DISCUSSION

Culture influences symptom presentation and help-seeking behaviour. Culture influences many aspects of mental illness, including how patients from a given culture express and manifest their symptoms, their style of coping, their family and community supports, and their willingness to seek treatment. We found that in the present study, subjects belong to a particular place and location, majority of them are staying on the banks of river Brahmaputra, which is perennially flooded. This leads to encroachment of land and displacement of the population, adding stress in their life. These people staying near the river side are considered to be migrants, majority of them profess the

Table 9. Relationship between Perceived Social Supports, Life satisfaction and Perceived Stress

Variable	Perceived social support
Perceived social support	1
Life satisfaction	.688**
Perceived stress	.010

**P<0.001

faith of Islam, and have a unique style of dialect prevalent in the Mymensingh district of Bangladesh, and having rituals and preference of food as per their own tradition and culture. These findings suggest a high probability of somatization syndromes in immigrant patients and tendency to somatize more than other ethnic groups. Most of the people belong to lower socio economic status and are illiterate and poor. Our results indicated that majority of the female gender (93%) were suffering from somatization. Previous studies observed a significant increase of somatization among women and reported the possibility of physiological differences between males and females as a cause for it (Nakao et al., 2001). Accordingly, gender differences in brain function, hormones and reproductive processes were considered as possible factors related to the increased risk to complain for somatic symptoms in women**.** The occurrence of somatization varies across socio cultural group and seems to be influenced by environmental stressors. Barskey (1983**)** observed that somatization is more common among those who are less educated, of lower socio economic status, of rural background, and among ethnic groups that discourage the direct expression of emotional distress. In the present study also we found that majority of the patients were illiterate, belonging to rural background and belonging to lower economic status, facing financial difficulties and hardship and having trouble in affording basics of life to a large extent were suffering from somatization. Patients stated that tension/stress as the causation of their illness or problem, economic difficulty was listed as the major stressor in the present study. In somatization disorder, the body serves as a medium for expressing social and emotional distress. In fact, in order to deal with the accumulated stress, tension and conflict, family members will frequently activate the socially acceptable pattern of somatic complaints (Sluzki, 1987). In the present study also it was reported that most of the patients are not having satisfying family life in terms of family care and concern, adequate spousal relationship and need fulfilment. Perceived social supports and perceived stress was found to have significant positive correlation ($p= 0.01$) with life satisfaction. Life satisfaction has been found to moderate the effects of stress on symptoms of psychological distress. Poor well being was found in the majority of patients and significant positive correlation with Perceived stress was found. Subjective well-being has been related to an individual's ability to deal effectively with stressful life circumstances. Patients who suffer from medically unexplained symptoms experience a lower level of life satisfaction (Noyes et al., 1995). Support from family and other social network may have moderating or mediating effect on the stress experienced by the ethnic grouping. Family perceived social supports were high for patient, when compared to that of other areas of perceived social support (Societal perceived social support and Friends perceived social support) in our study. Ethnic groups are more likely to rely heavily on the social support of the extended family for assistance with personal problem rather than on friends, neighbour (Al-Isa, 1995).In the study of South East Asians refugees, it was found that having social support and confiding relationship tended to modify the effect of the migration trauma experiences on mental health. The results indicate that social support, particularly perceived social support from the migrant ethnic community plays a significant role in predicting mental health out comes. Social support, social relationship and various psychosocial factors are associated with Perceived Quality of Life. Subjective QOL has been found to be associated with social support invariably among subjects in clinically stable phase or recovering from a severe episode (Michalak et al., 2006).

Limitation

Before concluding, some of the methodological limitation of this study has to be considered. First, the study had relied on the hospital population than the community sample. Second, the study was limited by a small sample size.

Conclusion

Culture shapes the perception and expressions of distress, variation in the expression of physical symptoms have been observed across cultures. The importance of demographics, psychosocial functioning, social support, life satisfaction, general wellbeing and perceived stress was emphasized in the explanation of somatization tendencies among social, psychological and cultural variables.

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RULES FOR THE AWARD

LEELABATI BHOLANATH AWARD
Donated by Late Dr. G.C. Boral

1. All the members of Indian Psychiatric Society, Eastern Zonal Branch will be eligible to compete for the award.
2. The award will be for the best paper presented in the annual conference of Indian Psychiatric Society, Eastern Zonal Branch
3. The intending competitors will have to apply to the Chairman, Awards sub-committee with four copies of complete paper by a deadline to be fixed up by the Executive committee of Indian Psychiatric Society, Eastern Zonal Branch.
4. There will be a minimum gap of 45 days between the last date so fixed up and the corresponding conference.
5. All the four copies of the written text should be typed in double space on one side of paper. The first page of the text should contain only the Title of the paper, Names of the author and authors if any and the place of research. These particulars except the title should not be reflected anywhere else in the paper. The Chairman of the Awards Sub-committee will detach the first page and forward the remaining text to the judges.
6. The evaluation of the papers will be in two parts:
   a) The written text: 75 marks
   b) The oral presentation : 25 marks
7. The evaluation of written text will be by three judges as decided by the awards sub-committee. Each of the judges will evaluate the paper out of 25 marks and communicate the result to the Chairman confidentially. The sum total of the marks awarded by the three judges will form the written text marks in respect of the paper.
8. In theoretical evaluation the relevant review, objectives, methodology, presentation of data and discussion thereon will be adjudged.
9. The best three papers as per evaluation of written text will be considered for oral presentation in the Annual Conference of Indian Psychiatric Society, Eastern Zonal Branch. In case of tie, it will be decided by further comparative evaluation by the Chairman, Awards Sub-Committee.
10. The Chairman, Awards Sub-Committee will communicate to the selected authors about the date and time of presentation under intimation to organizing Secretary of the corresponding Conference.
11. The oral presentation of the selected three papers will be adjudged by three judges appointed for the purpose, by the Chairman, Awards Sub-committee from among those attending the Annual Conference. In case the Chairman, Awards Sub-Committee is not attending the Annual Conference, he can forward the result of written text evaluation confidentially to the Organizing Secretary who would act on his behalf.
12. The Oral presentation has to be made by the author or one of the authors, all of whom must be members of IPS, Eastern Zonal Branch. Time allowed for presentation will be 8 minutes to be followed by 2 minutes for discussion.
13. All the three judges of oral presentation will evaluate out of a total of 25 marks and the average will be taken for consideration. The awardee will be decided on the basis of total of written and oral evaluation.
14. All the papers so presented will be eligible for BPSS Award but for this only the evaluation of Oral presentation will be considered.

ORIGINAL ARTICLE

Memory deficits among chronic alcoholics- A hospital based study

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ABSTRACT

The predominant neuropsychological components found deficit among the chronic alcoholics is memory. The aim of the study was to assess the memory deficit among chronic alcoholics and non alcoholic groups. A total of 30 chronic alcohol dependent patients, diagnosed according to ICD-10 criteria were selected through convenient sampling method. Another 30 matched non alcoholic groups were also selected and they were identified as non alcoholics based on the subjective report and the information's collected from friends and relatives. A semi structured proforma was used for collection of socio-demographic variables for both the groups. The NIMHANS Neuropsychological Battery was administered to both the groups. The components such as delayed recall, verbal learning and memory, verbal memory and visual learning and memory were found to be highly significant at 0.003 probability levels among the chronic alcoholics whereas sentence repetition was found to be insignificant at 0.015 probability level.

Key words: Memory deficit, chronic alcoholic, Neuropsychological Battery etc.

INTRODUCTION

Chronic heavy alcohol consumption leads to a number of neuropsychological impairments, including memory deficits. In terms of memory, chronic heavy alcohol users and alcohol-dependent persons show impaired performance on a range of memory tasks, for example learning words lists[1,2], short and long term logical memory[3], general working memory[4] and executive function [5].

Memory is divided into declarative and procedural. These two types seem to be separated both in operation and in the neural systems involved. Procedural memory requires no processing by the structures of the medial temporal lobe and appears to be a collection of different abilities such as motor skills learning, conditioning, talents etc. Declarative memory has been further subdivided into episodic and semantic. Episodic memory stores past events in a sequential fashion as temporally dated episodes. Semantic memory stores organized information, concepts, vocabulary and knowledge of the world without regard to the time sequencing. Declarative memory does require processing by and interaction with the structure of the temporal lobe such as the medial temporal area, hippocampus, amygdale and others[6].

Psychological models of memory suggest that a potentially memorable stimulus, once perceived goes to short-term memory (STM). STM may contain an "Immediate phase" without any significant storage and another phase of brief storage. STM can only store limited small bits of information for a short time and is easily distracted. From STM the perceived event may or may not go to the long term memory (LTM). Placement in declarative LTM requires the interaction of the medial temporal lobe structure and the cortex. This probably involves protein alteration and synthesis and thus takes time to accomplish, estimated to be 10-30 seconds. If LTM is further consolidated into a lasting memory trace, an engram, even more interaction between the temporal lobe and the cortical area where the engram is stored must occur. This needs more time, likely in stepwise, and may occur through actual synaptic changes in the cortex. Multiple cortical areas are involved in the storage of memory. The medial temporal areas functioning during learning, consolidation and recall but do not store memory[6]. It was suggested that alcohol does not appears to alter the rate of decay of information from iconic memory[7]. But rather impedes acquisition of such information or its retrieval from iconic storage.

However several other studies[8] utilizing the free recall learning procedure concluded that alcohol disrupts storage of new information in LTM. This provides support to the notion that alcohol impedes the transfer of information from STM to LTM. One explanation could be that elaborative processes in STM are disrupted by alcohol such that stimuli are poorly encoded and thus do not enter LTM but retrieval processes fail under acute alcohol intoxication[9].

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In alcoholics, the characteristic pattern of cognitive impairment, other memory deficits, is poor performance in task of abstraction, visuaspatial abilities, verbal fluency, planning and organization, shifting of set and error utilization. The deficits are more severe depending on how much alcohol he/she consumed[10].

The present work aims at findings the different areas of memory disturbances among chronic alcoholics and non-alcoholics that will help formulating proper treatment strategies and for better management of the alcohol dependent patients.

MATERIAL AND METHOD

The present study was conducted in the Department of Clinical Psychology and Psychiatry, Regional Institute of Medical Sciences, Imphal. A total of 30 patients were selected through convenient sampling method from patients attending the Department of Psychiatry for treatment with a diagnosis of Alcohol Dependence syndrome by ICD-10 criteria. Another 30 match non alcoholic groups were also selected based on the subjective report and after confirmation of their abstinence status from family members, friends and relatives.

Aim of the Study

To assess the memory deficits among chronic alcoholic and non alcoholic groups.

Inclusion criteria

i. Alcohol dependence patients with fulfilling ICD-10 (1992) diagnostic criteria irrespective of sex, religion, education and marital status.
ii. Age below 55 yrs
iii. Currently abstinent, in protected environment (7 days to 14 days)
iv. Continuously drinking for > 5 yrs

Exclusion criteria

i. History of significant head injury.
ii. History of multiple drug abuse.
iii. History of mental retardation or other neurological or major psychiatric disorders.
iv. On psychotropic medications.

Assessment Tools

(i) Semi Structure Proforma for collecting information on Socio-demographic variables.
(ii) The ICD-10 classification of Mental and Behavioural Disorders, (Clinical descriptions and diagnostic guidelines (WHO, 1992)[11].
(iii) NIMHANS Neuropsychological battery: The first comprehensive neuropsychological battery developed in our country is the NIMHANS neuropsychological battery. It is an adaptation of the Luria's approach to neuropsychological assessment and combines clinical ratings and neuropsychological tests. The battery utilizes the scores on the test together with clinical observation and rating as well as qualitative evaluation to obtain a comprehensive neuropsychological profile of the adult patient. The validity of the battery is perfect for both lateralization and localization compared with CT and operative findings[12].

Procedure

Patients who were diagnosed as alcohol dependence syndrome according to ICD-10 criteria by consultant Psychiatrists and those who also fulfilled our inclusion and exclusion criteria were enrolled in the study. After detoxification in De-addiction centre of Dept. of Psychiatry, an informed consent was taken from all the subjects and they were also explained about the purpose of the study. Patients who were agreed to participate in the study were then administered a semi structure proforma for collecting information on social demographic variables. The five subtests of NIMHANS Neuropsychological Battery viz. Delayed Recall, Sentence Repetition, Verbal Memory, Verbal Learning and Memory and Visual Learning and Memory were then administered individually in both alcoholics and non-alcoholic groups.

Statistical Analysis

The data were analyzed by Chi-square test to find out the significant difference between observed and theoretical frequencies of both the groups.

RESULTS

The sample size consists of 60 study subjects – 30 chronic alcoholics and 30 non-alcoholics.

Table No. 1 shows majority of our patients belonged to age range of 41-50 yrs. From Table No. 2, it was found that all patients were educated. Majority of patients were involved with some kind of business (Table no. 3).

Table No.4 shows that the memory components such as delayed recall, verbal learning and memory, verbal memory and visual learning and memory were found to be very highly significant among the alcoholics than the non-alcoholics whereas the sentence repetition was found to be insignificant in both the groups.

Table 1. Age distribution

Age	Sample
20-30	4
31-40	26
41-50	30
Total	60

Table 2. Educational qualification

Education	Sample
Up to Matriculation	19
Higher. Sec.	9
Graduate	21
Post Graduate	11

DISCUSSION

The present study was a modest attempt to find out the memory impairment among the chronic alcoholics

Table 3. Occupation wise distribution

Occupational status	Study subjects
Employed	15
Business	26
Self employed	14
Unemployed	5

comparing with the control groups (Non-alcoholics) by using NIMHANS Neuropsychological battery.

In the earlier studies it has been reported that chronic alcoholics frequently associated with co- morbid psychiatric, medical and neurological disorders like depression and antisocial personality disorder[13, 14] and brain trauma and liver disease[15, 16]. Other studies involving the measuring of changes in working memory and attentional abilities over a six month period in abstinent and relapsed alcoholics have found that, abstainers normalized the performance of attentional abilities and working memory whereas relapsers obtained results which were more severely impaired[1].

In the present study memory was tested by using five subtests of NIMHANS neuropsychological battery such as delayed recall, sentence repetition, visual learning, verbal learning and memory and visual learning and memory. All the tests were found to be very highly significant except sentence repetition when compared with control group. From our findings it is suggested that immediate memory is not much affected in chronic alcoholic. This may be because of focus attention is not very much required in the sentence repetition test. On the other hand recent memory; both verbal and visual and working memory (short term memory) are affected in chronic alcoholic abusers. This may be because focus attention is quite required in recent memory as well as working memory. This present findings of memory impairment can be compared with the findings of Jone BM, 1973; Ryan C et al, 1980; and Brandt J et al., (1983)[18, 19, 20].

Table 4. Comparison of impairment of various components of memory in two groups

Neuropsy. Components	Alocholic Group (N=30)		Non alcoholic Group (N=30)	Chisquare	P. Value
	Adequate	Impairment	Adequate		
Delayed Recall	14	16	30	21.818	0.000
Sentence Repetition	28	2	30	2.069	.15
Verbal Learning & Memory	5	25	30	42.857	.003
Verbal Memory	5	25	30	42.857	.003
Visual Learning & Memory	3	27	30	49.09	

From these findings we can conclude that the memory components like Delayed recall, Verbal Learning and Memory, Verbal Memory and Visual Learning and Memory were found significantly impaired among chronic alcoholics. The findings of this study will help in framing proper treatment strategies and for better management of the alcohol dependent patients. It is recommended that in order to generalize our findings further study involving a larger patient sample, broad based and longitudinal in nature should be undertaken.

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ORIGINAL ARTICLE

Efficacy of psycho-education with the patients of schizophrenia

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ABSTRACT

Psycho-education is a valuable tool in helping clients to know what's wrong with them, what diagnosis they have, how the condition may have developed and what should be done to improve the condition. Present study was conducted to assess the efficacy of psyhcoeducation with the patients of schizophrenia. The sample consisted of 40 schizophrenic patients (20 patients in the treatment group and 20 in the control group). Pre-assessment of both groups was done for positive and negative symptoms using Scale for the Assessment of Positive symptoms, and Scale for the Assessment of Negative Symptoms. Behavior checklist was used to assess the daily functioning of the patients. The experimental group underwent psycho-education along with pharmacotherapy and control group received only pharmacotherapy. Post assessment was done after one month. Comparison of treatment and control group was done for pre and post-treatment scores. The experimental group showed significant improvement in comparison to control group in negative symptoms (affective flattening/ blunting, alogia, avolition- apathy, and anhedonia-asociality). Significant improvement was noticed in insight and drug compliance.

Key words: Schizophrenia, Psychoeducation, negative symptom, positive symptom, insight, drug compliance.

INTRODUCTION

Schizophrenia is a chronic, severe and disabling psychiatric disorder. People with schizophrenia suffer from symptoms such as hearing voices, or believing that the other people are reading their minds, controlling their thoughts, or plotting to harm them. These symptoms may leave them fearful and withdrawn. Approximately one percent of the population develops schizophrenia during their lifetime. Schizophrenia affects the men and women with the equal frequency.

Psycho-education is defined as systematic, structured, didactic information on the illness and its treatment. It focuses on teaching people about their problem, how to treat it and how to recognize the early signs of relapse. It works by improving the knowledge of patients as well their family members by providing them a greater understanding of the importance and benefits of medication. Information is provided on medication, prognosis, and alleviating and aggravating factors. Early signs of relapse are described and actively monitored. It includes integrating emotional aspects in order to enable the participants, patients as well as their family members, to cope with the illness [1, 2]. Psycho-education has proved to be a highly effective therapeutic method to reduce relapse and rehopsitalization rates of schizophrenic patients. Education about their disease has good results on clinical course and especially on compliance [3] . The purpose of psycho-education is to increase patient's knowledge and understanding of their illness and treatment. It is supposed that increased knowledge enables people with schizophrenia to cope more effectively with their illness. Psycho-educational intervention involves interaction between the information provider and the mentally ill person and/or family members. Herz et al. (2000) [4] examined whether a program for relapse prevention is more effective than treatment as usual in reducing relapse and hospitalization rates among out patients with schizophrenia. Over a period of 18 months 17% relapse (7 patients) and 22% rehospitilzation (9 patients) were found in the relapse prevention programme group in comparison to 34% relapse (14 patients) and 39% rehospitlization (16 patients) in the treatment as usual group. Programme for relapse prevention was effective in detecting prodromal symptoms of relapse early in an episode.

Psychoeducational approach involves making

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psychological difficulties of patients understandable to them. In this approach, the occurrence of an episode of major psychological disorder is attributed to the exposure of a genetically vulnerable person to an excessive stress in the absence of sufficient protective factors, such as social support, coping strategies and medication. By this approach patients gain comprehensive understanding about his strength and vulnerabilities, intrapsyhic conflicts, defenses, coping skills, cognitive deficits and social support system. It helps to increase the quality of life of individual.

Meta analysis of all psycho-educational intervention conducted on patients with schizophrenia found that psycho-education was a useful part of the treatment program [5] . Degmecic et al. (2007) [6] assessed whether there are differences in compliance between two groups of patients, one who went through education about schizophrenia and the other group without the education about the disorder. A group of 30 patients was educated about schizophrenia during hospitalization, while a control group of 30 patients was not educated about the disorder. Results showed the importance of education on the compliance, as well as on the positive attitude towards the drug treatment, which is one of the most important predictors of the successful treatment of the schizophrenia. Aguglia et al. (2007) [7] also reported that schizophrenic patients receiving drug therapy, traditional psychosocial and psychoeducation showed significant improvement in positive symptoms, negative symptoms, and overall psychopathology. Significant reduction of the number of hospitalizations and of days of hospital stay was also noticed. Most of the studies have focused on family psychoeducation programme. However, further studies are needed to assess the efficacy of psychoeducation of schizophrenic patients in Indian context. Hence, present study was conducted to assess the efficacy of psycho-education with the patients of schizophrenia

Table 1. Socio-demographic characteristics

Variables		Treatment Group N=20	Control Group N=20	Chi-square
Education	Primary- Matric	15	16	0.16
	Above Matric	5	4	
Marital Status	Unmarried	12	9	0.90
	Married	8	11	
Occupation	Unemployed	11	8	0.90
	Employed	9	12	
Domicile	Rural	9	7	0.30
	Semi Urban	7	8	
	Urban	4	5	
Socio-economic status of family	Low	12	10	0.40
	Middle	8	10	
Religion	Hindu	10	12	2.28
	Muslim	3	5	
	Christian	7	3	

MATERIALS AND METHODS

Sample: A sample consisting of 40 male hospitalized schizophrenic patients (diagnosed according to DCR of ICD-10) was selected from Ranchi Institute of Neuro-Psychiatry and Allied Sciences (RINPAS), Ranchi. Duration of illness of patients was more than 2 years. Patients having co-morbid psychiatric disorder, and significant physical, organic, and neurological disorders were excluded. Informed consent was taken from patients and their guardians to participate in the study. Sample characteristics are given in Table 1.

Treatment group and control group were comparable on socio-demographic variables. Majority of the patients were educated up to matirc level, unmarried, Hindu, and belonged to low socio economic status of rural background.

Tools-

Socio demographic and Clinical Data Sheet- To collect information regarding socio-demographic characteristics and other related clinical information of the sample a socio-demographic and clinical data sheet was developed.

Scale for the Assessment of Negative Symptoms (SANS) [8] : This scale assesses negative symptoms of schizophrenia. It is divided into seven negative symptoms, namely, affective flattening or blunting, alogia, avolition, apathy, anhedonia, asociality and inattention. It is a 6 point rating scale comprising of 24 items.

Scale for the Assessment of Positive Symptoms (SAPS) [9]: This scale assesses positive symptoms of schizophrenia. It is divided into five positive symptoms, namely, hallucination, delusion, bizarre behavior, positive formal thought disorders and inappropriate affect. It is a 6 point rating scale comprising of 35 items.

Brief Behavior checklist

It consists of 10 items regarding illness related behaviour. The main areas include insight, drug compliance, ward activities and personal care and hygiene. Items were selected on the basis of review of related literature and professionals' feedback. Face validity of the checklist was confirmed by taking expert opinion.

Psycho-education: Psycho-education was given in following areas

Nature, course and prognosis of schizophrenia

Insight about illness

Drug compliance

Personal care and hygiene

Active participation in the ward activities

Procedure: After detailed interview 40 patients were selected. Patients were randomly divided in treatment and control group. Twenty patients formed treatment group and 20 control group. For baseline assessment positive and negative symptoms were assessed by administering Scale for the Assessment of Positive symptoms (SAPS) and Scale for the Assessment of Negative Symptoms (SANS) respectively. Behavior checklist was used to assess behavioural aspects of the patients. Patients of both groups were on medication. Psycho-education was given to treatment group for 1 month. After one month, post treatment assessment was done to assess the efficacy of psycho-education.

RESULTS

Treatment and control groups were assessed for psychopathology and functioning using SAPS, SANS and behavior checklist. Data was analyzed using t test (for continuous score) and chi-square (for category variable) to find out the significance of difference between pre and post treatment conditions.

Positive and negative symptoms:

Pre-treatment score, post-treatment score, and difference in pre and post-treatment score (showing improvement after treatment) are given in Table 2.

Table 2 shows that patients of both groups showed improvement after treatment, however, treatment group which received psycho-education showed better improvement. The difference in the improvement of both groups was statistically significant ($p < .01$) for affective flattening or blunting, alogia, avolition-apathy, and anhedonia-asociality.

Brief Behaviour checklist:

Brief behviour checklist included items regarding illness related aspects, namely, insight (awareness of illness and symptoms of illness), drug compliance (importance of medication and side effect of medication), ward activities (ward work, helping ward staff and participation in group meetings), and personal care and hygiene (care and hygiene, brushing teeth and bathing). Findings are given in Table 3.

Table 3 shows that significant difference ($p<.01$) was found between the pre and post score of treatment group in comparison to control group in the area of insight (awareness of illness and symptoms of illness) and drug compliance (importance of medication). No significant difference was found in ward activities, personal care and hygiene.

DISCUSSION

In the present study an attempt was made to find out the efficacy of psychoeducation in improving positive symptoms, negative symptoms and behavioural aspects related to insight, drug compliance, ward activities, personal care and hygiene of schizophrenic patients. Findings suggest that patients with schizophrenia who underwent psychoeducation along with pharmacotherapy showed significant improvement in negative symptoms in comparison to control group who was only on pharmacotherapy. Difference was statistically significant for affective flattening or blunting, alogia, avolition-apathy, and anhedonia-asociality. Findings of the present study are consistent with findings of previous studies. Goldman and Quinn (1988) [10] reported significant gains in information and reduction in negative symptoms after psychoeducation. Significant reduction in positive and negative symptoms was reported by Aguglia et al. (2007) [7]. In present study positive symptoms decreased in both groups, however, inter-group difference was not significant.

In comparison to control group, the experimental group of the present study showed significant improvement in awareness of illness and symptoms of illness, and were better informed about importance of medication. This finding is also consistent with findings of previous studies. Ran et al. (2003) [11] reported that psycho-educational family intervention for persons with schizophrenia results in gain in knowledge, a change in the relatives caring attitude towards the patients, and an increase in treatment compliance. Improvement in patients' behaviour has been reported by other researchers also [5].

The finding of the present study showed that psycho-education to schizophrenic patients improved the drug compliance of the patients. These findings are according to the findings of Pitschel et al. (2006) [12] and Degmecic et al. (2007) [6] who also found that the patients of schizophrenia and their relatives undergoing psychoeducation showed better compliance than the patients under routine care without psychoeducation. Sibitz et al. (2007) [13] found that positive effect were observed after short term week program with regard to symptoms, knowledge about the illness, illness concept, control conviction and quality of life.

In conclusion findings of present study suggest that psychoeducation to schizophrenic patients improves insight

Table 2. Difference between pre-treatment and post-treatment score.

Variables	Group	Pre Mean	SD	Post Mean	SD	Difference Mean
Affective flattening or blunting	Group 1	7.30	4.44	4.35	2.88	2.95
	Group 2	8.60	3.43	8.35	3.63	.25
Alogia	Group 1	5.30	3.29	2.95	2.56	2.35
	Group 2	5.85	3.19	5.60	3.20	.25
Avolition- Apathy	Group 1	4.45	3.17	5.90	4.96	1.45
	Group 2	5.10	2.98	10.55	6.40	5.45
Anhendonia-asociality	Group 1	5.55	5.13	3.25	3.32	2.30
	Group 2	6.25	5.17	5.85	4.83	.40
Inattention	Group 1	5.25	3.09	4.10	2.10	1.15
	Group 2	5.25	2.88	4.75	2.71	.50
Hallucinations	Group 1	5.35	3.13	4.10	3.09	1.25
	Group 2	4.80	2.11	4.20	1.60	.60
Delusions	Group 1	7.90	6.15	6.05	4.94	1.85
	Group 2	6.00	5.25	3.70	4.79	2.30
Bizarre Behavior	Group 1	2.75	2.93	2.50	2.68	.25
	Group 2	3.65	3.32	2.65	3.09	1.00
Positive formal thought disorder	Group 1	3.55	3.87	3.00	3.32	.55
	Group 2	5.30	4.35	5.50	5.08	.20
Inappropriate affect	Group 1	1.65	1.26	1.25	1.19	.40
	Group 2	2.50	0.88	2.40	0.75	.10

Group 1-Treatment group Group 2- Control group

Table 3. Difference between pre-treatment and post-treatment score

Variables	Item No.	Assessment	Response	Group-1	Group-2
Insight	Awareness of illness	Pre	No	17	16
			Yes	3	4
		Post	No	14	17
			Yes	6	3
	Symptoms of illness	Pre	No	20	20
			Yes	0	0
		Post	No	7	18
			Yes	13	2
Drug compliance	Importance of medicine	Pre	No	20	15
			Yes	0	5
		Post	No	2	13
			Yes	18	7
	Side effects of medicines	Pre	No	20	20
			Yes	0	0
		Post	No	10	15
			Yes	10	5
Ward activities	Ward work	Pre	No	14	11
			Yes	6	9
		Post	No	8	10
			Yes	12	10
	Helping ward staff	Pre	No	16	16
			Yes	4	4
		Post	No	7	14
			Yes	13	6
	Participation in group meetings	Pre	No	16	20
			Yes	4	0
		Post	No	10	13
			Yes	10	7
Personal Care and Hygiene	Care and hygiene	Pre	No	15	17
			Yes	5	3
		Post	No	4	11
			Yes	16	9
	Brushing teeth	Pre	No	0	0
			Yes	20	20
		Post	No	0	0
			Yes	20	20
	Bathing	Pre	No	17	17
			Yes	3	3

and drug compliance. These patients showed significant improvement in negative symptoms, namely affective flattening/blunting, alogia, avolition- apathy, and anhedonia-asociality in comparison to schizophrenic patients without psychoeducation.

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ORIGINAL ARTICLE

Relationship between executive function and problem solving ability of schizophrenia patients

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ABSTRACT

Schizophrenia is a disorder associated with cognitive impairment and deficits, mainly in the area of attention, memory, and executive functions, which are related to an individual's adaptive and social skills. Schizophrenia patients also show mark deficit in their problem solving abilities and daily living activities. The present study aims to find out the relationship between clinical symptoms, executive function and problem solving abilities of schizophrenia patients.

30 schizophrenia patients were selected for the study and assessed using the Positive and Negative Syndrome Scale (PANSS), Wisconsin Card Sorting Test (WCST) and Problem Solving Inventory (PSI) respectively. Findings suggest that negative symptoms and executive functioning are potentially important mediating factor in a person's problem solving abilities in day- to- day life.

Key Words: Executive Functions, negative symptoms, Problem solving, Schizophrenia.

INTRODUCTION

It is widely recognized that schizophrenic disorders are often associated with a wide range of impairments of cognitive performances. Patients of schizophrenia, fare comparatively poor than normal controls on tasks of attention, memory and other cognitive functions as well as executive functions. In particular, patients with schizophrenia have been found to exhibit a cluster of symptoms collectively known as dysexecutive syndrome[1]. Features like, disturbed planning, lack of inhibition, contextual inappropriate responses, reduced cognitive flexibility, and poor problem solving, have been commonly described in Schizophrenia. Dysexecutive syndromes have a range of effects on activities of daily life, and social relationship. Green et al.[2] found that deficits in executive functions in patients with schizophrenia ultimately determine the functional outcomes in terms of poor community living skills, self- care activities, social problem solving skills, and psycho- social skills.

Problem solving abilities are implicated in all spheres of daily functioning of a person. They are vital in decision making required in small to complex situations a person comes across daily. The problem solving abilities in schizophrenia patients have been found impaired in general, which further limits the patient's ability to comprehend and aptly solve a situation. The situations may vary from instantly deciding the correct facial expression to follow daily routine work at time. Seeing its importance, there is always an onus on improving the problem solving abilities of schizophrenia patients. One of the frequently suggested moderators of problem solving in schizophrenia is cognitive functions. Revheim et al (2006)[3] have shown in their studies, that functional outcome for individuals with schizophrenia has been associated with cognitive impairment. Recently, attention has been given to establish the relationship between cognitive impairment and its outcome in daily living skills [4]. In recent times, efforts are been put to establish and validate the relationship of impaired executive functions and daily living functioning in schizophrenia. Keeping the above points in view, the present study aimed to see how does impairment in executive function affects the problem solving abilities in schizophrenia.

METHODOLOGY

This is a cross- sectional, correlational study conducted to find out the relationship between clinical symptoms, executive function and problem solving ability of schizophrenia patients.

Sample: Based on purposive sampling technique, a sample consisting of 30 male, hospitalized schizophrenic patients were selected from RINPAS. Subjects were between the age range of 25-50 years, and having basic reading and

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writing ability and no problem in color perception. All were right- handed. Individuals with Vision and hearing impairment, history suggesting organic pathology, substance abuse and mental retardation or significant physical illness and patients with severe psychopathology who have problem in comprehending instructions were excluded. All were cooperative and gave consent for the study. Sample characteristics are given in Table 1.

Tools

1. Socio Demographic and Clinical Data Sheet: It is a semi structured proforma especially designed for this study. It contained information about socio-demographic variables like age, sex, religion, education, marital status, domicile and occupation and clinical details, e.g., age of onset, mode of onset, course, duration, medication and side effects, history of alcohol or substance- abuse, any history of significant head injury, seizure, mental retardation, and family history of mental illness.

2. Hand Preference Battery (Annett, 1970)[5]: The hand preference battery was administered to check handedness of the subjects. The battery consists of 6 items. If all six items are performed by right hand the person is classified as right handed, if by left hand the person is left- handed and mixed performance is considered as mixed handedness.

3. Positive and Negative Syndrome Scale (PANSS)[6]: The PANSS is the standard tool for assessing clinical symptoms and outcome in treatment studies of schizophrenia and other psychotic disorders and is sensitive to change with treatment. The PANSS includes 30 items on three subscales: 7 items covering positive symptoms, 7 covering negative symptoms, 16 covering general psychopathology. Each item is scored on a seven- point item specific Likert scale ranging from 1 to 7. The ratings can be completed in 30- 40 minutes.

4. Wisconsin Card Sorting Test (WCST)[7]: It is a clinical neuro- psychological instrument originally developed by Grant and Berg (1948) to assess abstract reasoning ability, and the ability to shift cognitive strategy in response to changing environmental contingencies. WCST can be considered a measure of "executive function," requiring the ability to develop and maintain an appropriate problem- solving strategy across changing stimulus conditions in order to achieve a future goal. The WCST consists of four stimulus cards and 128 response cards that depict figures of varying forms, colors, and numbers of figures.

5. Problem Solving Inventory (PSI)[8]: Developed by P. Paul Heppner, the PSI consists of 35-item self-report measures on a 6-point Likert style format (Strongly agree to strongly disagree). The measure is designed to assess an individual's perceptions of his or her capabilities with regards to problem solving behaviors and attitudes. Subtests of the PSI are following

   a. Problem-Solving Confidence (self assurance while engaging in problem solving activities)

   b. Approach-Avoidance Style (a general tendency to either approach or avoid problem solving activities), and

   c. Personal Control (determines the extent of control one has over their emotions and behaviors while solving problems). High scores indicate general negative self appraisal.

Procedure

After taking the informed consent, only those patients were included in the study who met the criteria of schizophrenia following ICD- 10 DCR as well as the inclusion and exclusion criteria for the study. PANSS was administered to assess clinical symptoms. Problem solving ability and executive functions were measured by PSI and WCST, respectively.

Further, data were analyzed using descriptive statistics and correlation coefficient.

RESULTS

Socio- demographic and clinical details of the patients are shown in table 1 and 2 respectively. Mean age of patients was found to be 32.65 years. Majority of them were

Table 1. Sociodemographic data

Variables		Subjects
Age (in years) Mean		32.65±7.32
Education	Upto class X	25
	Inter	2
	Graduate	3
Marital status	Married	22
	Single	8
Occupation	Unemployed	17
	Agriculture	9
	Business	4
Domicile	Urban	12
	Rural	18
Religion	Hindu	20
	Muslim	5
	Christian	5

Table 2. Clinical details

Variable		Mean	SD
Age of onset of illness (in yrs.)		26.96	7.23
Duration of illness (in yrs.)		7.72	4.1
PANSS	Positive	14.23	9.3
	Negative	27.24	6.2
	General	35.72	9.6

Table 3. Relationship between PANSS and executive functions

Symptoms	Measures of Executive functions		
	Trials to complete 1st category	Perseverative error	Failure to maintain set
POSITIVE	.070	.039	.163
NEGATIVE	.119	.443*	.181

educated up to class X. Majority of the patients were married, unemployed, hailed from rural background (60%), and were Hindu by religion. Mean age of onset of illness of patients was 26.96 yrs and mean duration of illness was 9.72 years.

On PANSS, means (SD) scores were: Positive symptoms- 14.23 (9.3), Negative symptoms- 27.24 (6.2), and General psychopathology- 35.72 (9.6) respectively.

Table 3 shows the correlation between clinical symptoms as assessed on PANSS and executive functions, in terms of measure of WCST. Only three measures of WCST were assessed. It shows negative symptom in PANSS is significantly correlated ($p < .05$) with perseveration scores in WCST.

Table 4. Relation between clinical symptoms and problem solving ability of the subject

Symptoms	Problem solving index		
	Problem solving confidence	Approach avoidance ability	Personal control
POSITIVE	-.064	-.476*	-.324
NEGATIVE	-.521**	.183	-.412*

Table 5. Relationships between executive functioning and problem solving abilities

Measures of Executive functions	Problem Solving		
	Problem solving confidence	Approach avoidance ability	Personal control
Trials to complete 1st category	-.064	-.523*	.324
Perseverative error	.183	-.285	-.623**
Failure to maintain set	.285	.141	.043

Table 4 shows the correlation between clinical symptoms and problem solving ability, in terms of measures of the Problem Solving Inventory (PSI). Considering the positive and negative factors of PANSS, significant correlations were observed between positive factors and approach avoidance ability (r= -.476, p= .05). Negative symptoms was significantly correlated to problem solving confidence (r = - .521, p= .01) and personal control (r = .412, p=.05).

Table 5 shows the correlation between executive function (WCST measures) with Problem Solving Index measures. Most significant correlation was found between Perseverative errors in WCST with personal control (r = .623, p= .01), and then between Trials to complete first category and Approach avoidance style (r = -.523, p= .05).

DISCUSSION

The present study was conducted on 30 male patients diagnosed with schizophrenia, to know the relationship between clinical symptom, executive function and problem solving ability. Although the Wisconsin Card sorting Test is a comprehensive tool used to assess executive functions; only three of its measures, sensitive to problem solving skill were included; i.e Trials to complete 1st category Perseverative error and Failure to maintain set.

Overall findings of this study indicate problem solving ability is associated with the clinical symptoms and executive functions.

Clinical Symptom and executive function

Results showed that negative symptoms were significantly affecting Perseverative errors on WCST. Implication wise, it suggests that negative symptoms are affecting the subject's ability/ aptness to adopt newer strategies in event of failure of the present one. The findings are consistent with previous studies [9],[10] which suggest that negative symptoms do affect executive functions.

Clinical Symptoms and Problem solving ability

Relating clinical symptoms with problem solving abilities, it was found that negative symptoms are affecting problem solving abilities more than positive symptoms. While positive symptom was detrimental to Approach avoidance ability; negative symptoms were found affecting the subjects problem solving confidence, and personal control. This seemed to be quite obvious and validate that clinical symptoms first act like a barrier for the schizophrenia patient to actively involve in some activity; and even if they involve in the activity they are highly prone to leave the task in between. This is reflected in the reluctant and poorly motivated behavior of schizophrenia patient.

The findings are consistent with previous studies that

suggest that negative symptoms rather than positive symptoms are related to daily problem solving skills and confidence [3, 11, 12].

Executive function and problem solving ability

Findings related to Problem solving ability with executive functions are consistent with previous reports of relation between neurocognitive aspects of functional outcome. Results revealed that, executive functions did have impact on problem solving ability, as participants with poor score performance in executive function tests also showed low score in problem solving skills depicting poor ability to solve daily problems. In particular, trial to complete first category was related to approach avoidance; and perseverative error was related to personal control, indicating cognitive flexibility is a potentially important mediating factor in social and problem solving components. Findings are consistent with previous studies[13]. As Perseverative errors are indicative of subject's capacity to change his set according to changing situation; it further validates its role in patient's inability to aptly change and cope with real world situations, which keep on changing.

Limitations of the study include small sample size, and limited measures of executive functioning assessed. A follow up assessment after amelioration of symptoms could have given more information on role of clinical symptoms.

Still, the findings were able to indicate on the role of clinical features and executive functions in problem solving. This can have major implication in treatment plan of schizophrenia patients, by improving their problem solving skills.

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ORIGINAL ARTICLE

Prevalence of Suicidal Ideation in Hospitalized Psychiatric Patients

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ABSTRACT

Mental illness has been reported as one of the major factors associated with suicide. Present the study was conducted to assess the prevalence and nature of suicidal ideation among hospitalized psychiatric patients. This is a center based prevalence study, conducted in Ranchi Institute of Neuro-Psychiatry and Allied Sciences, Ranchi. Adult Suicidal Ideation Questionnaire and Brief Psychiatric Rating Scale were administered to 300 hospitalized psychiatric patients who were able to comprehend instruction of scales. Findings show that 16.4% patients had suicidal ideation. Among socio-demographic and clinical correlates only psychopathology was significantly correlated with suicidal ideation. Majority of patients having suicidal ideation had mood disorder.

Keywords : suicide, hospitalized patients, psychopathology, ASIQ

INTRODUCTION

Suicide is one of the acute emergencies resulting in death depending on the mode of the attempt of healthcare. Suicides have recorded an increase from nearly 40,000 in 1980 to 1,10,000 in 1999 [1]. As per reports, nearly 1,00,000 persons committed suicides in India in 1999 with an annual incidence of 11/1,00,000. Agarwal (2004) [2] summarized findings of various studies conducted in India on suicide rate. Suicide rate was approximately 12 per 1,00,000 to 43 per 1,00,000. The figure available for the year 1990 was 8.9 per 100,000 and suggested a rise of more than 40% from 1978. Bertolote et al. (2004) [3] analyzed 31 papers published between 1959 and 2001 and concluded that 98% of individuals who died by suicide, received at least one psychiatric disorder. Pillai et al. (2009) [4] have also found that mental illness is one of the risk factors for suicide. Few other studies also reported that more than 90% of suicide victims and attempters have at least one current axis I major mental disorder (mainly untreated), most frequently major depressive episode, substance use disorders and schizophrenia. Major depressive disorder was found in 56 to 87% cases, substance use disorders in 26 to 55% cases, and schizophrenia in 6 to 13% cases [5, 6].

Estimate of life time occurrence of suicidal attempt in patient with schizophrenia ranges from 18% to 55%. Approximately 10% of patient with schizophrenic successfully complete suicide. The lifetime risk of suicide is schizophrenia is in the range of 5% to 13% [7, 8] . Risk factors include being young male, in the larky years of the illness and having a history of multiple previous episodes or previous suicide attempt [9, 10].

Voltonen, et al. (2005) [11] investigated the prevalence rate and risk factors of suicidal ideation and attempts among diagnosed patient with bipolar I and II disorder and found that during the current episode, 39 (20%) of the patients had attempted suicide and 116 (61%) had suicidal ideation. Although all attempters reported ideation, during their lifetime 80% of patients (N-152) had suicidal behaviour and 51% (N-98) had history of attempted suicide. They found that severity of depressive episode and hopelessness were independent risk factors for suicidal ideation. Hopelessness, comorbid personality disorder and previous suicide attempt were independent risk factors for suicide attempts. There was no difference in prevalence of suicidal behaviour between bipolar I and II disorder, the risk factors were overlapping but not identical.

The APA (2003) [12] noted that approximately 50% to 75% of individuals with comorbid alcohol abuse and major depressive disorder commit suicide. Alcoholism is associated with a considerable risk of suicidal behaviour. Individuals with alcoholism who attempt or complete suicide are characterized by major depressive episodes, stressful life events, particularly interpersonal difficulties, poor social support, living alone, high aggression/ impulsivity, negative affect, hopelessness, severe alcoholism, comorbid substance, serious medical illness, suicidal communication and prior suicidal behaviour [13, 14].

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Scocco et al. (2008) [15] found that presence of a mental disorder was associated with a significantly increased risk for suicide ideation, plan, and attempt, even after controlling for socio-demographic factors and suicide-related variables. In the psychiatric hospital setting the in-patients who had most risk for suicide were those who had previously exhibited suicidal behaviour, had schizophrenia, had been admitted involuntarily, and had lived alone. It was noted that the risk of suicide persists among long stay schizophrenic patients [16] .

Overall, review of literature suggests that risk factors related to suicide are mental illness, unemployment, lack of formal education, presence of stressful life event, poor social support and physical disorder. Suicidal ideation, suicidal attempt and completed suicides are most commonly found in patients of schizophrenia, affective disorder and substance abuse.

Studies of suicide in in-patients in India are scanty and need further investigation. Present study was conducted to find out the prevalence, nature and severity of suicidal ideation among psychiatric in-patient and to find out its socio-demographic, clinical and other relevant correlates.

MATERIAL AND METHODS

Sample: All hospitalized patients residing in Ranchi Institute of Neuro-Psychiatry & Allied Sciences, Ranchi, during October 2006 to March 2007 were screened. Patients between age range of 20 to 50 years, with minimum one moth of stay in hospital and who gave verbal consent to participate in the study were selected. Total number of hospitalized patient was 486, out of which 300 subjects fulfilled the criteria and were selected for the study. Most of the patients (60.7%) belonged to age range of 20 to 30 years, were male (92%) educated up to above middle class (39%), Hindi speaking (97.7%), married (59%), and were doing farming as occupation (41.7%). Monthly income of family ranged between Rs. 1000 to and 5000 (89.3%). Most of the patients were having schizophrenia followed by mood disorder, substance induced disorders and psychosis NOS. The clinical characteristics of the subjects shows that the duration of illness ranged from 1 month to 360 months with mean duration 56.60 months (SD=64.073). Duration of hospitalization ranged between 1 month to 24 months with the mean duration of 2.44 months (SD=2.46). Previous suicidal ideation was present in 33.7% patients and 17.7% patients have attempted suicide previously. Fifty two percent patients were having history of substance abuse and 12.7 % patients were having history family history of self harm. About seventeen percent patients were not wiling to stay in the hospital and were repeatedly insisting for discharge.

Tools: In addition to the socio-demographic data sheet and clinical data sheet the following tools were used.

Brief Psychiatric Rating Scale (BPRS; Overall & Gorham, 1962) [17]: This scale was used to assess the severity of psychiatric symptoms. The BPRS consists of 24 items. Rating varies from 2-3 which indicates non pathological intensity of symptom and 4-7 which indicates pathological severity of symptom

The Adult Suicidal Ideation Questionnaire (ASIQ; Reynold, 1991[18]): This was used to measure suicidal ideation of the subjects. The ASIQ consists of 25 items. The respondent rates each ASIQ item on 7 point scale which assesses the frequency of occurrence within the part month. The scale ranges from 0 (I never had this thought) to 6 (almost everyday). The maximum possible raw ASIQ total score is 150 with higher scores indicating more numerous and more frequent suicidal thought.

Procedure: All hospitalized patients were screened according to inclusion and exclusion criteria and sample was selected for the present study. Socio demographic and clinical data sheet was filled after interview with subjects and informants (if available), and case record file. After initial screening, Brief Psychiatric Rating Scale and Adult Suicidal Ideation Questionnaire were administered to all subjects.

RESULT

Result of the present study shows that 16.67% of the subjects had significant level of suicidal ideation. Most of the patients with significant level of suicidal ideation were having mood disorder (19.44%) followed by schizophrenia (16.43%) (Table 1). Correlation was computed between suicidal ideation and socio-demographic variables, namely, age, sex, education, occupation and marital status (Table 2); clinical variables, namely, diagnosis, duration of illness, duration of hospitalization, and severity of psychopathology (Table 3); and other related variables, namely, past history of substance abuse, stressful life event, repeatedly insisting for discharge, previous suicidal ideation, previous suicidal attempt, history of self harm and family history of self harm (Table 4). Among all variables, statistically significant positive correlation was found only between severity of psychopathology and suicidal ideation. It means greater the severity of psychopathology higher the rate of suicidal thought among inpatient psychiatric cases.

Since suicidal ideation was significantly correlated with psychopathology, correlation of suicidal ideation and items of BPRS was calculated (Table 5). Findings showed significant correlation between levels of suicidal ideation and somatic concern, hostility, hallucination, excitement, motor retardation, tension, emotional withdrawal, suicidal ideation and motor hyperactivity.

Stepwise discriminates analysis of items of ASIQ was done to find out most discriminating items. Findings

showed that 8 items were most discriminating items which were able to classify patients having above cut off score and below cut off score (Table 6). These items were mostly related to death wish.

DISCUSSION:

Prevalence of suicidal ideation and its socio-demographic and clinical correlates were assessed in the present study.

Table 1. Correlation between suicidal ideation and diagnosis.

Diagnosis	Below cut-off n	Above cut-off n	Contingency C Coefficient
Schizophrenia (N= 140)	117	23	
Mood disorder (N= 108)	87	21	.073
Substance induced disorder (N= 32)	30	02	
Psychosis NOS (N= 20)	18	02	

Table 2. Correlation between socio-demographic data and suicidal ideation.

Variable	Correlation coefficient
Age	.087
Sex	.066
Education	.137
Occupation	.199
Marital status	.009

Table 3. Correlation between clinical characteristics and suicidal ideation.

Variable	Correlation
Duration of illness	.031
Duration of hospitalization	.016
Severity of psychopathology	.340*

* p<.05

Table 4. Correlation between other suicide-related variables and suicidal ideation.

Variable	Correlation coefficient
Previous suicidal ideation	.153
Previous suicidal attempt	.120
Past history of substance abuse	.089
Insisting for discharge	.064
Family history of self harm	.089

Table 5. Correlation of suicidal ideation with psychopathology (BPRS) and suicidal ideations (ASIQ)

BPRS	ASIQ
Somatic concern	11.961
Anxiety	4.501*
Depression	4.429*
Guilt	1.520*
Hostility	22.805
Suspiciousness	2.687
Unusual thought content	4.685
Grandiosity	4.039*
Hallucinations	6.340
Disorientation	3.838*
Conceptual disorganization	1.456
Excitement	5.115
Motor retardation	4.767
Blunted affect	8.316
Tension	16.878
Mannerisms and posturing	7.017**
Uncooperativeness	10.062*
Emotional withdrawal	14.128*
Suicidality	61.798
Self-neglect	2.222
Bizarre behaviour	5.271

* p<.05 ** p<.01

Significant suicidal ideation was present in 16.67% hospitalized patients. This finding is consistent with finding of previous studies [19] . About 20% patients of mood disorders, 16.67% patients of schizophrenia and 6.2% patients of substance induced disorder were having significant suicidal ideation. Previous studies also report that suicidal ideation is most frequent among patients with mood disorder, schizophrenia and substance use disorders. However, in few studies comparatively high prevalence rate has been reported for moos disorder and substance induced disorder [5, 6] . In a sample of 19 patients with schizophrenia Skodlar et al. (2008) [20] have also reported suicidal ideation in 15 (79%) patients in their past.

In the present study, no significant correlation was found between suicidal ideation and socio-demographic and suicide-related variables. This finding is consistent with finding of Scocco et al. (2008) [15] who found that presence

Table 6. Most discriminating items of ASIQ (stepwise analysis)

Step	Item No.	Items
1	11	I thought that killing myself would solve my problems
2	19	I thought that life was not worth living
3	13	I wished I had the nerve to kill myself
4	22	I thought that if I killed myself people would realize I was worth caring about
5	18	I thought about having a bad accident
6	03	I thought about how I would kill myself
7	07	I thought that people would be happier if I was not around
8	20	I thought that my life was too rotten to continue

of a mental disorder was associated with a significantly increased risk for suicide ideation, plan, and attempt, even after controlling for socio-demographic factors and suicide-related variables.

Among clinical variables, only psychopathology was significantly correlated with suicidal ideation. Previous studies have also reported similar findings. Fialko et al. (2006) [21] have also reported that general psychopathology score was significantly associated with level of suicidal thinking. Thought disorder particularly delusion of guilt and grandiose delusion were related to suicidal behaviour. Significant correlation between anxiety and suicidal ideation is consistent with findings of Sareen et al. (2005) [22]. Correlation between negative affect, hopelessness and suicidal ideation has been previously reported by Sher (2006) [13].

Findings suggested that suicidal ideation was more prevalent in the age range of 20-40 years, in male patients, who were unemployed, who had prior history of suicidal ideation and attempt, family history of harm, and severe psychopathology. Similar risk factors have been reported previously also [9, 10] .

Discriminant analysis identified 8 most discriminating items. This finding points out that brief screening tool may be used for screening suicidal ideation in hospitalized patients. A brief screening tool may be more frequently administered on patients as it will consume less time and it will be helpful in identifying patients who need detail assessment for suicidal ideation.

Overall, the present study suggests that 16.67% psychiatric in-patients had significant suicidal ideation. Among studied socio-demographic, clinical and suicide related variables only psychopathology was significantly correlated with suicidal ideation.

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REVIEW ARTICLE

Physical complications of intravenous drug abuse: A comprehensive review

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ABSTRACT

Injecting drug use(IDU) is highly prevalent and is associated with a large number of specific physical complications. These problems are related to the toxicity of the substances, their mode of consumption and as a consequence of the drug taking lifestyle. Local and systemic complications of IDU are associated with considerable morbidity and mortality. Hepatitis B and C viral infections are common among drug users due to sharing of both needles and other drug taking paraphernalia. HIV infection among injecting drug users has added to the existing burden. Hence, intravenous drug users need comprehensive assessment and evaluation before treatment.

INTRODUCTION

Current estimates of the number of persons in the United States who inject illicit drugs range from 600,000 to 1.2 million [1] . The medical complications of injection drug use are well described and underscore the human, economic and societal costs of drug use [2, 3]. India is no exception to the above phenomenon.

Injecting drug users (IDUs) are vulnerable to a range of injection related harms. The process of injecting can give rise to both vascular and soft tissue injuries and may expose IDUs to pathogens that cause localized or systemic infections. Repeated injections can cause venous trauma leading to thrombosis, scarring of the vein epithelium and vein collapse. Chemical damage can also arise from the substances injected [4, 5].

Infective complications in IDUs may be caused by a range of bacterial, viral, fungal or parasitic pathogens introduced via poor hygiene and injection of non-sterile preparations. Abscesses and cellulitis are, after scarring, the most prevalent soft tissue complications affecting up to 32% of IDUs and may increase the risk of more serious complications. Infections can develop in bones and joints through direct dissemination of pathogens via the blood, untreated soft tissue infection, or poor dentition [6-13]. Vascular injury and localized infections are common among IDUs, who tend to delay treatment seeking [8, 9, 14]. Factors independently associated with potentially serious or serious injection related injuries and diseases are: injecting in sites other arms, injecting non-powder drug forms, unstable accommodation, being aged 25 years or older and not always washing hands before injection [15]. Females, those who mainly injected drugs other than heroin, and those who reported a history of drug treatment, drug overdose, and/or sex work, were more likely to report lifetime injection related diseases and injuries [16].

Four principal factors contribute to intravenous drug users' higher risk for many medical conditions. Most illicit drugs have direct toxicities, which are responsible for a wide variety of medical sequelae (e.g. cocaine-related cardiotoxicity). Certain behaviors associated with intravenous drug use (e.g. exchanging sex for money or drugs) place drug users at elevated risk for specific conditions (such as sexually transmitted diseases). As many drug users are socioeconomically disadvantaged, life circumstances (e.g., congregate housing) may confer increased environmental risk for infections such as tuberculosis. Finally, diminished access to and effective use of care, and disruption of daily routines by active drug use may adversely affect clinical outcomes.

Data search methodology: The data search strategies for this review included electronic databases as well as hand-search of relevant publications or cross-references. The electronic search included PUBMED and other search engines (e.g. Google Scholar, PsychINFO etc.). Cross-searches of electronic and hand search key references often yielded other relevant material. The search terms used, in various combinations, were: physical, complications, intravenous, drug abuse, addiction, systemic, local.

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Data review methodology: The research/data inclusion for this review was dictated by the following principles. We were deliberately over-inclusive and liberal in our approach and did not stick to any standardized methodology for data inclusion. Rather we tried to include as much information as possible to cover various physical complications of intravenous drug use.

Physical complications of intravenous drug abuse

The process of injecting can give rise to both vascular and soft-tissue injuries and expose injecting drug users (IDUs) to a range of organisms that can cause localized or systemic infections or other complications.

I. Local complications of intravenous drug use

Skin and soft-tissue infections are common among injection drug users. In a San Francisco-based sample, one-third of active injectors examined by a physician had a concurrent abscess (65%), cellulitis (9%), or both (26%)[17]. Sixteen percent of injectors reported a history of abscess in the previous 6 months in a sample from Baltimore and prevalence rates of 20% to 30% have been reported in several studies of injectors in Europe[8, 18-20]. Necrotizing fasciitis can complicate skin and soft-tissue infections among injectors, conveying a high (10%) risk of mortality in one series[21]. The irritant effect of the additives in the injectable drug can cause thrombophlebitis. Severe thrombophlebitis leads to venous obstruction with consequent edema of the affected limb.

Table 1

Acute complications	Delayed complications
Cutaneous infection	Hyperpigmentation
Necrotizing fasciitis	Scarring
Necrotizing ulcers	'Sooting' tattoos
Pseudoaneurysm and mycotic aneurysm	Chronic venous insufficiency and ulcers
Thrombophlebitis	Cutaneous nodules, sclerosis
Ischemia and necrosis due to intra-arterial injection	Raynaud's phenomenon and peripheral ischemia

[Adapted and modified from reference 6.]

Risk of abscess has been associated with route of injection, with intramuscular (muscling) or subcutaneous (skin popping) injection conveying greater risk for abscess than intravenous injection[22, 23]. Other risk factors identified include higher injection frequency and injecting a mixture of cocaine and heroin (speedball)[22, 24]. In addition to injection of illicit drugs, nonprescription use of anabolic steroid injections have been associated with abscess formation[25]. Common sites of abscess are, in order of descending frequency, arm, leg, buttocks, deltoid, and head/neck in keeping with the hierarchy of injection sites reported in the literature[26, 27]. From India, there is a case report of large non-healing ulcer on thigh resulting from 'blind dating' with pentazocine after the subject exhausted all accessible veins[28]. Calcific myofibrosis due to pentazocine abuse has also been reported[29]. Das et al. reported bilateral deep vein thrombosis, toxic epidermal necrolysis, generalized erythematous desquamative rash, fibromyositis and contracture as rare cutaneous complications of intravenous drug use[30].

Diagnosis of skin and soft tissue infections is based on presenting symptoms, physical examination, and laboratory data. Presentation usually includes fever, local erythema and induration, with pain and tenderness in the involved areas. Potentially life-threatening cutaneous tissue crepitance, extensive cellulitis, regional lymphadenopathy, systemic toxicity, and severe pain are highly suggestive of deep infection. Plain radiographs may be helpful in identification of extensive tissue destruction and gas production associated with gangrene.

Staphylococci and *streptococci* are the most frequent pathogens. However, with increasing immunosuppression, other bacterial pathogens are encountered. *E. coli*, *Klebsiella*, *Bacteroides*, *clostridia*, and mixed flora consisting of both aerobic and anaerobic organisms are seen, as are fungal pathogens, such as the invasive Candida species[10]. Anaerobes most commonly isolated from injection-related abscesses in one series were fusobacteria, Prevotella species, peptostreptococci, actinomyces, and Veillonella species[31]. Other pathogens identified include anthrax (Bacillus anthracis) and tetanus (C. tetani)[32, 33]. Localized outbreaks of specific pathogens have been reported in connection with drug injection. In Scotland, Ireland, and England heroin contaminated by Clostridium species (the toxin-producing strain Clostridium novyi in particular) led to more than 40 deaths in a period of several months[34].

II. Systemic complications of intravenous drug abuse

Systemic complications affecting various organ systems

can also happen with intravenous use of cocaine, heroine and benzodiazepines.

1. Neurologic complications

There can be infectious and non infectious neurological problems because of intravenous drug use. Injection drug users are at increased risk for systemic infections that may affect the central nervous system. Endocarditis is associated with neurologic complications in 20% to 40% of patients, including cerebral embolism and infarction, hemorrhage from ruptured mycotic aneurysms, meningitis, encephalopathy, and parenchymal, subdural, or epidural abscesses[35]. Viral hepatitis may also cause encephalopathy, or, less commonly, hemorrhagic stroke a result of abnormal blood clotting[36]. HIV infection may cause neurologic complications either directly or through opportunistic infections that attack the central nervous system.

Focal central nervous system infections occur commonly among drug users, although most focal infections result from embolization of infected vegetations among patients with endocarditis. The most frequent focal infections are brain abscesses, which may also result from local spread of an ear or sinus infection, hematogenous dissemination from a distant focus, such as infection in the lung, skin, bone, or pelvis, or trauma with an open fracture or foreign body injury. Spinal epidural abscesses are also common, and are caused by direct local extension of vertebral osteomyelitis, hematogenous spread from distant infection, or blunt spinal trauma. Toxin-mediated diseases, including tetanus and botulism, comprise an additional important category of central nervous system infections among injection drug users. Wound botulism is caused by C. botulinum, and has been associated in particular with the injection of black tar heroin[37, 38]. Wound botulism initially causes blurred vision, dysarthria, and dysphagia, but may lead to descending muscle paralysis and respiratory failure.

Among non infectious neurologic complications cerebrovascular accidents can result from the embolus (from air bubbles or thrombosed veins) reaching the brain and causing damage (Cocaine, Amphetamine, Phencyclidine). Subarachnoid, intraparenchymal, intraventricular hemorrhage can result from Cocaine injection. Chronic organic brain dysfunction (dementia) can happen because of repeated impact of drugs on the brain cells. In case reports, heroin use is associated with myopathy, cerebral and cerebellar spongiform encephalopathy, and sciatic nerve palsy[39-41]. Cerebral vasoconstriction has been implicated as the mechanism of acute cocaine-associated neurologic complications, including ischemic and hemorrhagic stroke, in several case reports and case-control studies[42, 43] long-term cocaine use appears to predispose patients with incidental neurovascular anomalies, such as aneurysms and arteriovenous malformations, to present with intracranial or subarachnoid hemorrhages at an earlier point than nonusers.

2. Cardiac complications

Infective endocarditis is responsible for 5% to 8% of hospital admissions among injection drug users, and the overall incidence of infective endocarditis in this population is estimated to be 1 to 20 cases per 10,000 injection drug users per year[44, 45]. In the Detroit Medical Center study the male: female ratio among injection drug users with infective endocarditis was 5.4:1. Men with infective endocarditis were somewhat older and had significantly longer histories of addiction than women[46]. Injection drug users are also at significantly increased risk of recurrent endocarditis[47]. Cocaine use has been reported to be an independent risk factor for the development of infective endocarditis in injection drug users[48].

Risk factors for injection-associated endocarditis include HIV infection and frequency of injection[24, 49, 50]. One carefully done study found that alcohol consumption was associated with diminished endocarditis risk. The authors postulated that the effects of alcohol on platelet or endothelial cell function might account for their surprising finding[51].

The pathophysiology of infective endocarditis involves damage to the valvular endothelium, the formation of a platelet-fibrin thrombus, and adherence of bacteria to the platelet-thrombus plaque, followed by the proliferation of the infecting organism. Factors unique to the pathogenesis of right-sided endocarditis in injection drug users include injury to the valvular endothelium as a result of physical trauma caused by injected particulate matter or the physiologic effects of the injected drugs and immunologic dysfunction related to injected drug use.

Infective endocarditis among drug users can affect any heart valve. Although native valve endocarditis in the general population is most often left sided, infective endocarditis is most commonly right sided when associated with injection drug use. The tricuspid valve is involved in 40% to 69% of cases among drug injectors. This is thought to be caused by a variety of factors, including direct valvular endothelial damage from impurities contaminating the drug injected into the venous system (rendering the right-sided valves most susceptible to bacterial infection), predilections of certain skin flora for right-sided valve surfaces, and direct effects on the valvular endothelium of specific drugs (which may present to the right-sided valves in higher concentrations than to the left-sided valves)[52].

Despite the high prevalence of endocarditis, injectors develop infections with pathogens similar to noninjectors. *Staphylococcus aureus* is the most commonly identified organism, but other pathogens are often seen. These include *Pseudomonas*, *Serratia*, group A and B *Streptococcus*, and *Streptococcus viridans*. Increasingly, fungal pathogens are seen with immunodeficiency[53-56]. The practice of licking the needle before injection or ''cleaning'' the injection site with saliva has been associated with infective endocarditis caused by Eikenella corrodens, Neisseria sicca, and Rothia dentocariosa[57-59].

Complications are reported in most injection drug users with infective endocarditis. The most frequently reported complication in many series is septic pulmonary emboli, reflecting the greater prevalence of tricuspid valve infection. Pneumothorax may result from septic pulmonary emboli[60]. Pleural effusions (including empyema), pneumonia, and mycotic aneurysms of the pulmonary vessels are also described. Cardiac complications may occur in those with left- or right-sided involvement and include congestive cardiac failure, valvular insufficiency, myocardial abscess, myocarditis, pericarditis, and myocardial infarction caused by emboli to the coronary vessels. Central nervous system complications of infective endocarditis in injection drug users include stroke, mycotic aneurysm, brain abscess, meningitis, and spinal epidural abscess. Splenic abscesses complicate infective endocarditis in injection drug users and occur more commonly in those with S. aureus infection. Endophthalmitis may also occur as a result of hematogenous dissemination of infection. Immune complex–mediated glomerulonephritis may complicate infective endocarditis in injection drug users; one series of patients with S. aureus endocarditis that compared addicts with nonaddicts suggested that, although evidence of renal involvement (hematuria, pyuria) was equal in the two groups, acute renal failure was more common in the nonaddicted group[61]. Bone and joint infection as a result of hematogenous seeding may complicate infective endocarditis. The risk of musculoskeletal infections in injection drug users with infective endocarditis seems to be significantly higher than among nonaddicts with infective endocarditis[62].

The most common medical symptom associated with cocaine use is chest pain, which may be a result of cardiac ischemia or myocardial infarction. Cocaine use increases the risk of acute myocardial infarction by several mechanisms, including coronary vasoconstriction or vasospasm, increased adrenergic activity (which intensifies myocardial oxygen demand by increasing blood pressure, ventricular contractility, and heart rate), and increased platelet adhesion, aggregation, and intravascular thrombosis[63-64]. In one recent study, users of cocaine had a transient 24-fold increase in the risk of myocardial infarction in the hour immediately following cocaine use[65]. Among persons 18 to 45 years of age in the United States, cocaine accounts for up to 25% of acute myocardial infarctions[66]. In addition to acute myocardial ischemia and infarction, cocaine use is linked to dissection of the thoracic aorta and coronary arteries, cardiac rhythm and conduction abnormalities, left ventricular dysfunction, dilated cardiomyopathy, hypertension, and tachycardia[67-74].

3. Pulmonary complications

Occasionally an intravenous drug user may present to a physician with features of pulmonary hypertension. Particulate matters in the drug get trapped in the pulmonary circulation leading to formation granulomas and inflammatory exudates which might occlude pulmonary arterioles and result in the development of pulmonary hypertension.

Pulmonary edema can result from direct impact of drugs (Heroin, cocaine, amphetamine) or damage that follows fluid collection in the lung leading to breathlessness.

The development of pulmonary infections, aspiration pneumonia, bacterial pneumonia and tuberculosis is a common occurrence among intravenous drug users. The prevalence of latent tuberculosis infection (LTBI) among drug users varies by locale and population studied, but rates of approximately 15% to 25% are typical[75, 76]. It is uncertain whether active drug use is associated with an increased risk of developing tuberculosis disease among persons with latent tuberculosis infection[77]. The presence of HIV infection, however, clearly increases the risk that drug users with LTBI will develop active disease[78, 79].

Community-acquired pneumonia is common among intravenous drug users, particularly those with HIV infection. Encapsulated bacteria, most commonly Streptococcus pneumoniae, followed by Haemophilus influenzae, are the most frequent causes of pneumonia in both HIV-positive and HIV-negative drug users, and are highly associated with the classic symptoms of sputum production, chest pain, and fever[80]. Atypical bacteria, including Mycoplasma pneumoniae, Chlamydia pneumoniae, and Legionella species, are also common among drug users, and are more likely to cause dry cough and headache than classic pneumonia symptoms[81]. Pneumocystis carinii, Mycobacterium tuberculosis, and Mycobacterium avium are common among HIV-infected drug users. *P. carinii* pneumonia (PCP) occurred in nearly 90% of New York City IDUs evaluated in a study and was the most frequent AIDS-defining diagnosis[10].

Routine prophylaxis has been demonstrated to reduce PCP morbidity and mortality[82].

Angiothrombotic pulmonary hypertension is an uncommon but most interesting pulmonary complication of IVDU particularly those using heroin. Repeated injections of IV preparations intended only for oral use leads to embolization by inert filler material (starch or talc) to the lungs resulting in thrombosis of the small blood vessels[83].

Cocaine, particularly in alkaloidal (free-base) form, crack, may lead to noninfectious pulmonary disease in IVDU resulting in atelectasis, alveolar hemorrhage, pneumothorax, and pneumomediastinum[84].

4. Hepatic complications

Taylor et al. noted that IDUs may be exposed to hepatitis infection by sharing injection equipment or associated paraphernalia[85]. The wide scope of the clinical presentation from subclinical infection with serologic resolution to fulminant fatal hepatic failure likely results in the underreporting of these disorders.

Hepatitis B, C, and D are associated with intravenous drug use. The incidence of HBV and HCV in IDU populations is very high worldwide, with a very high proportion of at-risk individuals infected with both HCV and HBV. More than 300,000 people in the United States are infected with hepatitis B virus (HBV) each year, and 20% of these infections occur among drug users[86, 87]. Recent studies indicate that the seroprevalence of HBV antibodies among injection drug users ranges from 50% to 80% across the United States, and increases with age and duration of drug use[88, 89]. More than 80% of injection drug users who have been injecting for longer than 10 years are infected with HBV[90]. The outcome of acute hepatitis B virus infection is variable. Only approximately 40% of patients develop clinical symptoms of acute hepatitis, 25% develop jaundice, and less than 5% are hospitalized.

Following implementation of progressive enhancements in screening of the blood supply, injection drug use has become the primary route of transmission of HCV infection[91]. Other risk factors for HCV include intranasal drug use, hemodialysis, high-risk sexual behaviors, health care exposures, blood product transfusions, and receipt of HCV-infected transplanted organs[91, 92]. Among injectors, there is considerable geographic variation in HCV seroprevalence, ranging from 66% to 93% in major U.S. cities[93]. Acquisition of HCV infection is often rapid following initiation of drug injection: 77% of injection drug users in a Baltimore sample were HCV-infected within 1 year of first injecting, with injection frequency and injection of cocaine associated with increased transmission risk among injectors[94]. Sharing of drug preparation equipment, including cookers and the filtration cotton, is also clearly associated with HCV infection risk[95, 96]. Most patients do not seek medical attention in association with acute infection with hepatitis C, because clinical manifestations are often mild or absent[97]. Following initial infection with HCV, approximately 15% to 20% of persons appear permanently to clear the virus, and 80% to 85% of persons develop chronic infection.

Outbreaks of severe and fulminant hepatitis, primarily as a result of coinfection with HDV and HBV, have been reported in injection drug users and their sexual contacts, and the prevalence of HDV infection in drug users with chronic HBV is 50% to 80%[98-102]. In a comparison of HDV infection in drug users and nonusers, evidence of more rapid histologic deterioration of the liver was found in drug users[103].

5. Gastrointestinal complications

Gastrointestinal complications including bowel ischemia and perforations are associated with intravenous cocaine use. These complications are primarily caused by adrenergically mediated mesenteric vasoconstriction and focal tissue ischemia, but it is also hypothesized that cocaine has a direct toxic effect on gut mucosa[104].

6. Renal complications

Cocaine use is associated with both acute and chronic renal injury. Acutely, cocaine use may cause rhabdomyolysis, malignant hypertension, interstitial nephritis, or glomerulonephritis, all of which may lead to acute renal failure. In addition, cocaine use is associated with acute renal infarction caused by vasospastic injury and thrombosis, and with electrolyte imbalances, including respiratory alkalosis and lactic acidosis[105].

7. Musculoskeletal complications

The actual incidence of septic arthritis and osteomyelitis in IDU populations is unknown, as these are not reportable infections. Since past decades Staphylococcus aureus has apparently replaced Candida species and gram-negative bacilli (esp. Pseudomonas) as causative agent of bone and joint infections in IVDU[106]. Cases of rhabdomyolysis have been reported with intravenous use of free base cocaine and amphetamine[107]. Transient rheumatologic prodrome of HBV antigenemia may lead to chronic amyloidosis[108].

8. Immunologic abnormalities

Injecting drug users have subtle abnormalities in immune function, independent of HIV infection and other retroviral infections. Abnormal circulating immune factors include elevated plasma immunoglobins, especially the immunoglobulins, IgM and IgG; false positive rheumatoid

factor, and syphilis serology and febrile agglutinins and compliment fixation tests[109-113].

Cellular immunity has also been demonstrated to be abnormal in the IDU. HIV-1 antibody negative parenteral opiate abusers may have elevated total T lymphocyte counts as well as increases in both T helper and T suppressor cells. Measures of cellular immunity show diminished function. Natural killer (NK) cell function is diminished and cytotoxic T lymphocyte (CTL) function may also be impaired[114].

9. Infections

9.1. Human Immunodeficiency Virus (HIV)

HIV, the virus that causes acquired immunodeficiency syndrome has dramatically increased the adverse health consequences of injecting drug use, not only for the individual user, but also for user's sexual partners and children, and for the community as a whole. Most injecting drug users (IDUs) are sexually active, so IDUs infected with HIV can serve as a source of heterosexual transmission of HIV to noninjecting sexual partners. In USA 25% of both men and women acquire HIV through IDU[115]. In India, in various treatment centers about 10 –560 per thousand samples are positive for HIV and in state of Manipur, 50 percent of IDUS are HIV positive. Nationally, it has been estimated thatabout 8 percent acquire the infection through injecting drug use[116].

While earlier studies suggested that there was a more rapid decline in IDUs, more recent research has shown no significant differences in baseline or longitudinal viral load measurements or in the rate of development of AIDS in IDU vs non-IDU populations[117-120]. In contrast, age and gender appear to have a significant effect on disease progression. The risk of developing AIDS significantly increases with age, a finding seen across different exposure groups[119, 120]. Similarly, women have a similar rate of disease progression as men despite a lower initial RNA level[121, 122].

Approximately five percent of individuals are considered to be long-term nonprogressors, remaining healthy and immunologically intact for greater than a decade from seroconversion[89].These individuals have a low viral burden, strong virus-specific immune responses, and moderate viral attenuation[123]. Certain demographic findings, such as a history of IDU, age, or gender, did not differ in individuals with or without non-progressive HIV infection[124]. Recommendations have been made to minimize the impact of intravenous drug use particularly the transmission of HIV.

Table 2. Recommendations for persons who continue to inject illicit drugs

Stop using and injecting drugs
Enter and complete substance-abuse treatment, including relapse prevention
Never reuse or "share" syringes, water, or drug-preparation equipment
Use only syringes obtained from a safe, reliable source (e.g., pharmacies)
Use a new, sterile syringe to prepare and inject drugs
If possible, use sterile water to prepare drugs; otherwise use clean water from a reliable source (such as fresh tap water)
Use a new or disinfected container ("cooker") and a new filter ("cotton") to prepare drugs
Clean the injection site before injection with a new alcohol swab
Safely dispose of syringes after each use

Note : These recommendations are from consensus of the Centers for Disease Control and Prevention, the National Institute on Drug Abuse, the Health Resources and Services Administration, and the Substance Abuse and Mental Health Services Administration[125] .

9.2. Human T cell leukemia/lymphoma virus: type 1 and type 2

The frequency of non-HIV retroviral infections, primarily Human T-cell leukemia/lymphoma (HTLV) type II is lower than the frequency of HBV, HCV, or HDV among IDU populations in Europe, North America, and Australia[125-129]. HTLV-type II infection is more frequently reported than HTLV type I in IDU.

The clinical sequelae of HTLV-II infection are less well defined than those of HIV-1. It appears that the incidence of disease from HTLV-II infection alone is low, about 0.5% in high-risk populations. HTLV-II infection causes T-cell leukemia and lymphoma in both immunocompetent and immunodeficient patients[130]. Tropical spastic paraparesis has also been associated with HTLV-II infection[131].

9.3. Bacterial infections

An important aspect of the clinical management of opportunistic complications in the IDU is the early recognition, treatment, and prevention of potentially life-threatening bacterial infections. Bacterial infections involve those sites common in nonimmunocompromised hosts. Bacterial pneumonia, endocarditis, and sepsis have been reported to be increased in HIV-positive IDU. *Streptococcus pneumonia* and *Haemophilus influenzae* are common pathogens in immunocompromised drug abusers. These organisms are highly virulent and severe

infections may occur early in the course of immunodeficiency[132-134].

9.4. Fungal infections

These pathogens are seen in the setting of profound immunosuppression. Invasive candida infections are commonly seen as vaginitis in mild to moderate immunosuppression, oropharyngeal candidiasis seen in moderate disease with invasive esophageal candidiasis, and other fungal CNS and systemic disease seen with profound immunodeficiency.

Other fungal pathogens are often dictated by geographic location. Pathogens commonly seen in North America include histoplasmosis (Ohio Valley), coccidioidomycosis (Southwestern states), and cryptococcoses (endemic in North America) .

9.5. Syphilis and other venereal diseases

Problems of diagnosis and treatment of syphilis are more complicated nowadays as substantial proportion of intravenous drug users are part of the HIV-infected population. Seronegative secondary syphilis occurs in HIV-infected persons[139]. The course of the disease has been altered with an increase in persistent early-onset neurosyphilis (meningitis, meningovasculitis with stroke and cranial nerve abnormalities)[140]. Other venerel diseases such as gonorrhea, pelvic inflammatory disease, cervical dysplasia, chancroid, and nongonorrheal urethritis are also seen more frequently in IVDU[141].

10. Reproductive complications

It is well known that medical complications compromise many intravenous drug-involved pregnancies .

Table 3. Medical complications in pregnant intravenous addicts:

Anemia
Bacteremia, septicemia
Cardiac disease, especially endocarditis
Cellulitis
Poor dental hygiene
Edema
Hepatitis, acute and chronic
Human immunodeficiency virus (HIV infection)
Hypertension
Phlebitis
Pneumonia
Sexually transmitted diseases
Tetanus
Tuberculosis
Urinary tract infections - cystitis, urethritis, pyelonephritis

Sexually transmitted diseases have played an increasingly important role in this spectrum of diseases. Of most concern is that human immunodeficiency virus (HIV) disease is significantly linked to drug use. The practices of sharing contaminated needles to inject drugs, engaging in prostitution to buy drugs, or conducting direct sex-for-drugs transactions, have all contributed to this serious international health crisis. Addressing perinatal transmission, the landmark AIDS Clinical Trials Group (ACTG) study showed that administration of zidovudine (AZT) to a woman beginning at 14 to 34 weeks of pregnancy and to the infant for 6 weeks after birth reduced the risk of perinatal HIV transmission by about two-thirds from the previous percentages of 25% to 30% if the woman is untreated[142].

Mortality in intravenous drug users

Injecting drug users (IDU) are at considerably greater risk of morbidity and mortality than their non-injecting peers[143]. Characteristics such as gender and age[144], psychosocial factors such as unemployment and imprisonment[145] , dose and frequency of injection[146], medical complications from injecting drugs[143] and healthcare and drug treatment utilisation [147] are important factors determining mortality risk among IDU. In an Australian cohort of injecting drug users who were followed up for 16 years the overall mortality rate was 0.83 per 100 person years[148].

CONCLUSION

Injecting drug use is highly prevalent and is associated with a large number of specific physical complications. These problems are related to the toxicity of the substances, their mode of consumption and as a consequence of the drug taking lifestyle. Local and systemic complications of IDU are associated with considerable morbidity and mortality. Hepatitis B and C viral infections are common among drug users due to sharing of both needles and other drug taking paraphernalia. HIV infection among injecting drug users has added to the existing burden. Hence, intravenous drug users need comprehensive assessment and evaluation before treatment.

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Practical Management of Attention Deficit Hyperactivity Disorder (ADHD)

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Evolution of the concept

Table 1 outlines the evolution of the concept as it has developed over time and under different names and has became more acceptable, as its validity has improved with the advent of CT, MRI and PET studies in late 1980s[1] .

Table 1. Evolution of the Concept

Minimal Brain Damage Syndrome	1947
Minimal Brain Dysfunction	1962
Hyper Kinetic Syndrome of Childhood (ICD-9/DSM-II)	1965/68
ADDH or ADD(DSM-III)	1980
ADHD (DSM-IIIR)	1983
ADHD (3 subtypes) DSM-IV	1994
HKD (main 2 subtypes) ICD-10	1995

Ethnicity and ADHD

Children who fulfil the diagnostic criteria for ADHD are found in almost all cultures that have been studied so far[2.] The rates differ to some extent often reflecting the different instruments of assessment used. Cultural environment may affect a child's behaviour, but the differing attitudes of parents, teachers, clinicians and the society towards acceptable behaviour will also influence diagnosis[3] . Some European countries (e.g. Italy, Spain) and India and other Southeast Asian countries can be more accepting of boisterous, noisy behaviour and hence more 'child friendly' and more accepting and absorbing of the 'ADHD' like behaviour as 'normal'. At present there is a pressing need and scope for research looking into culture /ethnicity sensitive research instruments to explore this area further.

Issues in diagnosis

Attention Deficit Hyperactivity Disorder is the diagnostic category in DSM-IV (American Psychiatric Association 2000)[4] with three main types: Hyperactive-Impulsive(HI), Inattentive(IA) and Combined type. While the last one (Combined type) is the most common, it along with the first (HI) are identified more frequently in boys just as the second (IA) is identified more in girls. In the International Classification (ICD-10) children with similar difficulties are diagnosed under Hyperkinetic disorder (WHO 1992)[5]. This is a more restrictive diagnostic system and hence leads to a lower prevalence of the disorder as it captures the more severely affected children and also excludes children with anxiety or mood disorders . A Diagnosis should not be made unless (a) there is impairment of function and (b) the behaviour is pervasive over at least two settings. There is no clear dividing line between normal hyperactivity and ADHD. All the same, when a child is at the severe end of the spectrum, there is no debate about the need to intervene medically. Issues in diagnosis are outlined in Table 2.

Table 2. Diagnosis

-Onset before age 7

- Persistence for minimum of six months, with significant impairment in coping with occupational (school) or social demands.
- Cut off and exclusion criteria apply.

Inattention	Hyperactiveity	Impulsivity
-Does not attend	-Fidgets	-Talks excessively
-Fails to finish tasks	-Leaves seat in class	-Blurts out answers
-Can't organise	-Runs/climbs excessively	-Cannot await turn
-Avoids sustained effort	-Cannot play/work quietly	-Interrupts others
-Loses things, 'forgetful'	-Always 'on the go'	-Intrudes on others
-Easily distracted-	-talks excessively*	

Differential diagnosis

Differential diagnoses are outlined in Table 3.

Table 3

ADHD OR SOMETHING ELSE
Pure ADHD
A normal child
Pure behavioural problem (O D D/ C D)
Adjustment disorder
Abused child
Parental fixed beliefs or mental health problems

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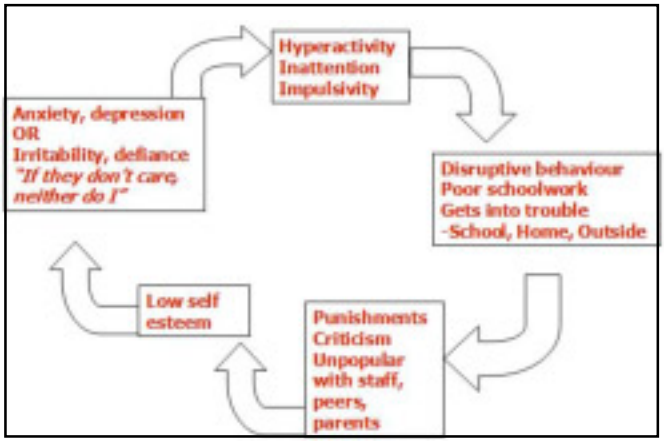
ADHD AND SOMETHING ELSE

Other psychiatric disorder
Developmental disorder
Global Learning Disability
Other Medical disorders
Psychosocial adversity
ASD including Asperger's syndrome
Specific Learning Difficulty or Global Learning Disability
Post Traumatic Stress Disorder (PTSD)
Emotional Disorder
Substance Abuse

Management

In practice, a clinician needs to focus more on the needs of a child and family which are often complex and clinical co-morbidity (presence of multiple associated conditions in one child) and social adversity, which are very common. A multi-modal treatment programme must be individually customized, continually monitored and optimized. A basis for the main components is conceptualized in Fig 1. This should take into account the pathogenesis of various difficulties in a child and family over time leading up to the time of the multimodal assessment.

Figure 1. Pathogenesis and Multimodal management



This consists of a combined approach which includes and starts with:

Psycho-education

Psycho-education forms the basis of all treatments for ADHD. We need to create adequate opportunities for providing education for the family, child and teachers about the disorder and interventions required.

This includes an explanation of the nature of the developmental disorder. The child is not mad or just naughty. He 'cannot' do many things rather than 'would not' do those things. Poor impulse control can be explained as not having finely tuned brakes in a car which can have an accident even though it can be a fine car. Treatment can provide the child with 'better brakes that give him more control of his own behaviour'. Narratives, stories and rituals can be of particular help[6].

We also need to work with any resistance that we find in implementing appropriate interventions.

In some children it is like a developmental delay and they grow out of it by adulthood. In others, many symptoms (especially Inattention and Impulsivity) can persist, though hyperactivity often declines with age. At present it looks as if only 30 to 40% children outgrow it.

Enhancing Parenting Skills

As a part of psycho-education, it is important to explain that ADHD is not caused by bad parenting. In its pure form, it is a disorder that has a substantial genetically heritable component just like eye colour, skin colour, height are heritable.

Parents need help in appreciating the importance of looking at positives and strengths of their children who have ADHD e.g. energy, passion about pursuing their own interest, willingness to take risks (a characteristic that is valued and harnessed in some jobs).

They also need help in strengthening a positive relationship with the child and limiting negative parenting styles, as many parents are overwhelmed by a sense of negativity or guilt in relation to the child[7].

They need to appreciate the value of and to become competent in establishing clear rules, praising the child often and without delay, being consistent with rules, positive and negative consequences.

They need to try to foresee problems but they do not need to be perfect! Staying relaxed and doing something nice for themselves are equally important.

Behaviour management

Effective interventions include behavioural therapy for the child and his or her family, in school as well as at home.

It requires identification of problem situations and precipitating factors and providing behaviour modelling, consistent and appropriate disciplinary strategies, employing immediate rewards for achieving targeted behaviours, using cost systems to reduce problem behaviours.

Social reinforcement is more effective and time out may need to be used as punishment for very serious problem behaviours.

Schooling

Making work interesting by breaking it into small pieces, using visual and auditory cues to remind the child to keep on task, rewards for reaching stepwise goals which lead to eventual completion of a major piece of work are some strategies.

In class, it may be helpful for the child to be in front. The child will need reminders, diary keeping skills to bring the right homework etc.

The classroom environment should aim to reduce distracting stimuli, and the lessons should be organised in such a way that the length of each task is shorter and less complex.

However, the structures, rewards, short tasks and positive experiences need to be increased

Many of the principles mentioned above under the subheading of 'Enhancing Parenting Skills' and 'Behaviour Management' would be applicable for the school setting as well.

Activity scheduling

The child will benefit from building up activities like karate, sports to burn up excess energy. Yoga or meditation will also be very useful to improve the child's stress bearing, resilience as well as improving attention and concentration.

Support Groups

Parents and children can benefit from support groups. These groups can have psycho education, social activities, advocacy, support network, attention training, self control and many other useful components[8]. For self help groups or support groups, one alternative may be for the professionals to help form these groups and then handover to parents so that they can take over the continued running and administration of the groups. Its important to anticipate that the initiation and forming and developing of these groups can be slow and arduous but well worth it once they become established .This may happen over years rather than months.

Psychopharmacology

Currently drug treatment of the child plays a central role in many cases. Some of the commonly used medications are listed in Table 4.

Table 4. Psychopharmacology

Medications- Stimulants

Methylphenidate Immediate Release (MPH-IR)

Ritalin (Methylphenidate IR) 10mg white tablets

Equasym (Methylphenidate IR) (5,10,20 mg tablets

ConcertaXL (MPH Extended Release-12 hours) 18, 36, 54 mg capsule-like bullet shaped tablets

Equasym XL(MPH Extended Release-8 hours) 10, 20, 30 mg Capsules

Dexedrine (Dexamphetamine)

- 5mg tab (Rarely used)
- Dose: Start 2.5 mg BD
- May be useful in children with ADHD and epilepsy

Medications—Nonstimulants

Strattera (Atomoxetine)Capsules various strengths

- Different mechanism
- 24 hour control
- Noncontrolled drug
- Similar but less frequent and intense side-effects .Nausea more frequent.
- Rarely liver dysfunction

Safe uses of such medications are pointed out in Table 5.

Table 5 . Side Effects

Common and/or Transient

Abdominal pains, headaches, tearfulness, lethargy.

Sleeplessness

Loss of appetite

HR, BP—Increase

Uncommon

Tics, psychosis, blood changes

Long term—Growth suppression

Long term tolerance and addiction - not reported

Efficacy of interventions

Psycho-pharmacotherapy is of proven short-term effects, but long-term effects are well documented for up to 2 years only. Parent management training is of proven short-

term effects and also of proven short- and long-term effects in children with oppositional disorder. Behavioural interventions at school are also of proven short-term effects. As regards Psychotherapy of patient, Self-management and social competence training are helpful; Self-instruction training is less successful (because of transfer problems) and therapies that are not behaviour-oriented have not been formally evaluated.

The findings from the MTA Study (Multimodal Treatment Study of Children with ADHD, a Multi-centre study by NIMH) include the following[9, 10] :

Medication or combination treatment was significantly more effective than either psychosocial treatment or community physician referral.

A combination of medication and behavioural treatment showed greater efficacy than psychosocial/behavioural treatment alone.

In terms of parent satisfaction, the combined approach (behaviour treatment and medication) was rated best

In terms of symptom management and overall efficacy, the routine medical care in the community was the least effective regimen.

Specific considerations in Preschoolers

In preschoolers, it is essential to fully explore behavioural treatments

(e. g. parent training and play behaviour intervention) before starting pharmacotherapy and to be aware of the age restrictions for pharmacotherapy.

Other approaches

Cochrane Database of Systematic Reviews[11] has a protocol on therapeutic applications of meditation therapies including ADHD for example, the Santa Barbara Institute and UCLA's Mindful Attention Programme (MAP). Mindfulness training and meditation have been found to reduce attention and conduct or anger problems in children and adolescents[12, 13]. Mindfulness-based parent training can help parents become more mindful in rearing their (disruptive) children and lessen the grip of automaticity in families with disruptive children [14].

Special diets, dietary supplements, megavitamins, anti-motion sickness medication, & EEG biofeedback are used but not proven[15, 16, 17] .

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CASE REPORT

Folie Simultanée : A case report

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INTRODUCTION

Shared psychotic disorder is a rare disorder, which is also referred to as shared paranoid disorder, induced psychotic disorder, *folie a' deux* and double insanity. Jules Baillarger (1860)[1] first described the syndrome and called it *folie a communiquée*, while Lasegue & Falret (1877)[2] first described *folie a' deux*. In this disorder transfer of delusions takes place from one person to another, who are closely associated with each other for a long time and typically live together in social isolation for a long time. In its more common form, *folie impossée*, the person who first develops delusion is dominant & is the active element, more intelligent than the other, who creates the delusion and progressively imposes it upon the second, who is the passive, submissive and suggestible. In *folie a' communiquée*[1], the second person develops psychotic symptoms only after a variable period of time. While initially the second person shares the content of the delusional ideas of the first, these later assume the autonomy of their own and have fresh delusional content not derived from initiation by the first subject. In *folie a' deux*, separation of the subjects results in reduced intensity of the delusions in the second subjects, while this is not so in *folie a' communiquée*. Shared psychotic disorder or *folie a' deux* is undoubtedly an intriguing condition of very great relevance to the understanding of human psychopathology. It is perhaps the most impressive example of a pathological relationship. The condition & its variants are recognized in ICD-10[3], where it is referred to as Induced Psychotic Disorder (code F24) and also in DSM-IV[4], where it is referred to as Shared Psychotic Disorder. When the condition involves more than two persons, it is called *folie a' trios, folie a' quatre, folie a' cinq*, or even a whole family, *folie a' famille.* Pande & Gullabbani (1990)[5] have reported cases from India.

The term *folie simultanée* was first described by Régis[6] in 1881 as a form of the condition in which delusions occur simultaneously but independently in two persons in close association for a long time who are hereditarily predisposed to psychotic illness. As there is no dominant partner, separation does not in itself improve the condition of either.

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CASE REPORT

Three members of a family, the mother, a daughter & a son presented with psychotic symptoms of ranging from 2-4 weeks. It was the daughter who first developed the symptoms first. She started hearing some strange voices telling her different types of thing including that she is a girl of bad character and wants to establish sexual relation with different people in her contact including her brother. She became extremely frightened and developed the symptoms of severe agitation, insomnia, shouting, crying spells, irrelevant talks, mood fluctuation, silly laughs and lack of appetite. Voices would frequently do various types of comments on her behavior. After about 10 days, the mother also became severely agitated and developed the idea that she and her family is being persecuted by some unknown enemy, who are hatching conspiracy against her and her family. She also had severe insomnia, lack of appetite, occasionally hearing different types of critical voices and bouts of crying. After about 1 week, the son started showing psychotic symptoms, characterized by delusion of persecution more or less same as her mother, lack of sleep, lack of appetite, occasional severe agitation, shouting and violent activities. He also experienced occasional hearing of voices passing him different types of commands. He also had fluctuations in his mood and laughing without reason. There was no previous history of any types of psychotic illness in the any of the family member including the patients. As usual in our society, the family contacted different types of faith healer, but the conditions of the patients gradually worsened. At the time when the family sought psychiatric consultation, full blown psychotic symptoms were observed in all the three patients. They were found to be severely restless, with lack of self care, incoherent thinking, inappropriate affects, delusions and hallucinations as stated above and lack of insight. The daughter was found to be most severely agitated and she experienced more frequent and persistent hallucinations. All the three patients were put on

antipsychotic drugs olanzapine, 15-20 mg/day, with clonazepam 0.25 mg thrice daily. As they were having severe insomnia, they were also given nitrazepam 5-10 mg per day on as needed basis. As the daughter and son were found to be more severely agitated, intramuscular haloperidol was also given to control their agitation. Parenteral fluids & other supportive measures were also instituted. All the three patients started showing gradual improvement. Improvements were first observed in the symptoms of sleep and agitation. Other symptoms also subsided gradually. Psychotic symptoms of delusions and hallucinations started resolving after 8-10 days. Complete resolution of psychotic symptoms was observed first in the mother and the son in that order, who were free of psychotic symptoms after about one month. The daughter was also free of psychotic symptoms after about 6-7 weeks. Maintenance therapy of olanzapine 10mg/day was continued for six months. The daughter was given maintenance treatment for a year. No relapse in any of the patient was observed at follow-up after 1 year.

DISCUSSION

The three cases, if considered individually, fulfilled the criteria of acute polymorphic psychotic disorder with symptoms of schizophrenia (F23.1) according to ICD 10, as all of them had onset of psychotic illness of less than 2 weeks duration with delusions & hallucinations & varying emotional state. But taken together, we had cases of acute psychotic disorder occurring within a family and in people with close emotional link, thereby bringing the category of induced delusional disorder (F24) into consideration. Here we have criteria of two or more people sharing the same delusion or delusional systems have an unusually close relationship and some evidence that the delusion was induced by the active or the dominant member. DSM IV has the category of shared psychotic disorder (297.3), which states of delusion developing in context of close relationship of another person with already established delusion and the delusions are similar in content[7,8,9]. But in the present case, the daughter, who first developed the psychotic symptoms, was not the active or dominant member of the group. Moreover, contents of delusions in the three patients were not exactly the same. ICD 10 further states that, if there are reasons for believing that two people living together have independent psychotic disorders neither should be coded in F24. ICD 10 also has an exclusion category of *folie simultanée* mentioned in the code F24, but the criteria for the same are not stated. The present case may be put in the category of *folie simultanée* as we have case of psychotic disorder occurring simultaneously in people living in close relationship, though hereditary predisposition of psychotic illness could not be demonstrated. Moreover, we have reasons to believe that this relationship has some role to play in causation of psychotic disorder in second & third person, but the diagnosis of induced psychotic disorder could not be established as the delusions were not directly transmitted.

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CASE REPORT

Psychotherapeutic intervention of reactions in amputation: Two case studies

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ABSTRACT

Amputation is a traumatic event for an individual. The resultant disability brings along gross changes and restrictions in patients occupational and psychosocial functioning. In Indian context, amputees are often at bay with psychotherapeutic intervention and left to cope with the challenging situation on their own. Psychotherapeutic interventions can be handy in helping these patients to cope up with their emotional turmoil and adjust with the situation. We report the case of two transfemoral amputee patients from CRC Bhopal, who were presented with Depression, anxiety and other emotional problems and underwent Cognitive Behaviour Therapy and supportive psychotherapy for 6 weeks.

Keywords: Amputee; Depression; Anxiety; Psychotherapy.

INTRODUCTION

Amputation is a traumatic event for an individual. The resultant disability brings along gross changes and restrictions in patients occupational and psychosocial functioning. The psychological aftereffects of amputation have been found to create distressing and disabling impact on the individual, and unlike other traumatic events the symptoms often linger for a prolonged period.

Phantom limb phenomenon is very common in amputee cases in the beginning; however amputees are known to have psychiatric manifestations too in long run. Common among these manifestations are depression, anxiety, insomnia, suicidal ideations and psychotic behaviour[1]. Irrespective of this, amputees are often at bay with psychotherapeutic intervention and left to cope with the challenging situation on their own. Especially in Indian context, amputees are hardly considered eligible for psychotherapeutic intervention and it is projected that a considerable number of amputees remain at large with the required psychotherapeutic intervention and face the situation on their own[2].

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Psychotherapeutic interventions in trauma cases are well documented, however, in the case of amputees there is lack of literature in India. Also there seems to be a lack of comprehensive therapeutic package for amputees.

Considering the above points, the following two cases were considered for illustration so as to show the indication and efficacy of psychotherapy (cognitive behavioural and supportive) in amputees.

Patients and method:

CASE 1: A 55 year old male, educated up to BA, and lately been working as constable in Madhya Pradesh Police. He suffered injuries in a landmine blast one year back and his right leg had to be amputed transfemoral (above knee). The patient was provided with prosthetic aid and was referred by the department of prosthetics and orthotics for psychological intervention. It had been more than 9 months since the patient was fitted with a prosthetic.

On interviewing, the patient reported feeling helpless, sad, anxious, depressed, loss of sleep and occasional crying spells.

The patient was relieved from his job; though he got some compensation. Of all the problems he reported, he was more concerned about feeling helpless and being on the mercy of family members.

CASE 2: A 29 year old female, unmarried undergraduate student, who met a road accident two years back and she had to be amputed transfemoral in her left leg. The patient was provided with prosthetic aid and was referred by the department of prosthetics and orthotics for psychological intervention.

On interviewing, the patient reported high irritability, increased anger, lowered frustration tolerance, anxiety and sleep disturbances.

She had extreme anger towards the surgeon, who amputed her, as well as towards relatives and friends who often and frequently dropped at her place to see her and

sympathesised with her. She felt like slapping those people especially relatives. Though with the help of prosthetic, she could walk now, she had limited venturing out to avoid people.

Tools

The following tools were administered on both the patients (pre and post intervention) to assess their psychological wellbeing, levels of depression and anxiety.

Beck Depression Inventory (BDI)[3]

The Beck Depression Inventory is one of the most widely used measures to assess severity of depression. BDI scores although are sensitive to the presence of depressed mood, they are not diagnostic.

PGI General Well Being Measure (PGIGWBM)[4]

PGI General Well-Being Scale was used to measure the psychological well-being of the participants. This is a 20 item scale and the subjects are required to tick the items applicable to them as they feel 'these days and in the past one month'.

Hospital Anxiety and Depression Scale (HADS)[5]

It is a self-assessed reliable instrument for detecting states of anxiety and depression in medical outpatient clinic setting. The anxiety and depressive subscales are also valid measures of severity of the emotional disorder.

Dysfunctional Analysis Questionnaire (DAQ)[6]

The scale is a valid measure of assessing dysfunction subjectively experienced by the patient after illness. The scale measures dysfunction in five areas, viz. Social, vocational, Personal, family and cognitive.

The Therapeutic package

The psychotherapy package was mainly cognitive behavioural and supportive oriented, spanned over six weeks. Subjective changes were made according to patient, and in general it included the following

Psychoeducation

Psychoeducation was imparted to the patients explaining the psychological reactions after amputation and their long term sustenance. Amputation was explained to them as a mode of treatment rather than failure of treatment.

Activity scheduling

Amputation had caused a significant change in daily routine of both the patients. While the first patient had to discontinue from his job, the second patient had practically nothing to do rather than sitting at home. Thus, daily activity of these patients was rescheduled. It focused on improving occupational functioning, increased time spend on interacting with people, hobbies and interests. Especially for second patient who had to drop from her college; it helped in inculcating alternate activities and she took admission in a correspondence course.

Muscular relaxation

Progressive Muscular relaxation was imparted to both the patients, to control their anxiety, and irritability. It proved to be difficult initially for the patients, when they had to "skip" the amputed part of their body during relaxation training; but gradually with constant motivation and practice they were able to do it without distraction.

Cognitive restructuring

Cognitive restructuring methods were used to help patients identify their automatic negative thoughts, and dysfunctional beliefs that were leading to feelings of depression, anger and irritability.

The aim was to lower down the level of consciousness of their state in public places, change their perception of what other think about them, as well as their exploration of possibilities still lying ahead.

Family counselling and motivation enhancement

The family members of both the patients were counseled. They were explained about the increased empathetic care required by the patients and their increased vulnerability to break down in stressful situations. Care burden apparently seemed to be present especially in second case (pt. being female and unmarried). Family members were counseled regarding this.

RESULTS

Table. Pre and Post Intervention Psychological test scores of the clients.

	Case 1		Case 2	
	Pre Intervention	Post Intervention	Pre Intervention	Post Intervention
BDI	31	17	25	14
PGIGWBM	7	12	5	11
HADS				
Anxiety	10	6	8	5
Depression	14	9	12	8
DAQ				
Social	49	46	45	42
Vocational	45	43	93*	90*
Personal	40	36	43	34
Family	30	31	36	30
Cognitive	21	20	23	21

*Attenuated Score

The table suggests that depression and anxiety was significantly present in both the patients as shown by the scores on Beck depression inventory and Hospital anxiety and depression scale which improved after the intervention.

General well being score also improved for both the patients after the intervention. The dysfunctional analysis questionnaire too also shows comparative improvement in dysfunction level of the patients individually. The dysfunction was found more in social, vocational and personal areas, than family and cognitive areas.

DISCUSSION

Amputation as an experience connotes to extreme trauma. The loss of a body part, which is not going to be seen or felt again prolongs this trauma and the patient relives it again and again. Depression and other related phenomenon are common in amputees and the present patients were no exceptions. However it is worth mentioning the differences in the manifestation of the symptoms. While the first patient (male and elderly) expressed more helplessness and depressed feelings; the second patient (female and younger) expressed irritability and anger, and lowered frustration tolerance.

Literature too suggests that psychological reactions to amputation varies and depends largely on sociodemographic/clinical characteristics of amputees[7].

Cognitive restructuring played an important role in modifying the patients negative automatic thoughts, helping them change their perception of how other people looked at them. Psychoeducation and family counselling helped in modifyning the perception of patient and family members regarding amputation and ensured better care from the family members. Muscular relaxation helped reducing the anxiety levels of the patient and finally motivation enhancement helped improving patient's activity and confidence.

The cases illustrated here indicates that, psychotherapeutic interventions are effective and highly indicated in amputee cases.

It also indicate that, there lies subjective differences in the manifestation of depression among amputees. Mostly, they depend upon sociodemographic and personal characteristics, that is subject to further exploration.

The study had certain limitations too. A personality profiling of the patients could have been done, that could have helped understanding the patients coping, strengths and vulnerabilities better. More importantly a follow up assessment after the intervention couldn't be done.

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Effective teaching and training

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We are often invited to contribute to professional development programmes in different countries. Many readers of the journal would also be in a similar situation either teaching overseas or at other centres in India. Here, I would like to share some of the principles that have emerged from the experiences of our teams from the International Institute of Child and Adolescent Mental Health contributing to training capacity developments in a variety of countries such as, Switzerland, United Kingdom, Ireland, Greece, Serbia, United Arab Emirates and India.

We need to keep in mind that training we provide is based on shared learning [1, 2, 3]. This includes identifying need and context; discussing ideas, and identifying risks and benefits; finding training methods and materials that fit the context; imparting and facilitating skill enhancement in others, and so on. To do this successfully, we need to be confident of our own professional skills and areas of expertise. We need to be clear about what we can and cannot do, especially as other colleagues may be more appropriately skilled for some tasks we have been invited to undertake. While being confident of our own skills, it is essential to maintain the delicate balance of skills and confidence. In all discussion and planning we must be alert to the risks of deskilling. We may contribute best by enabling delegates to critically evaluate, and when necessary to modify, the trainings we propose.

Preparation for the task: While preparing for the task, we need to consider various questions and issues.

Understanding expectations and objectives: We must consider what are the expectations of us? How explicit are these? How much do these expectations vary across professional ranks and disciplines? Have training needs and training objectives been identified? We may also wish to ask: Are existing legislations and policies in relation to mental health already being implemented? Are these considered adequate? Or are these thought to need reform? What are the local systems that ensure the safety of children?

Clarity about expectations in relation to the training objectives is essential. If there are differences in the expectations between the invitee and hosts, effort should be made to understand and minimize these differences. We need to be aware of the fact that complex relationships and unspoken agendas exist between people everywhere, perhaps especially so within hierarchical relationships and organisations. While we may not fully understand these, alertness to our own ignorance may prevent serious misunderstanding.

Who should we train?: This is a service development issue that can be part of the preliminary dialogue but may only be possible when we are on site, and our hosts have got to know us better. It is important at some point to ask whether it may be preferable to offer multidisciplinary training and to consider which disciplines need training e.g. teachers for school mental health[4, 5]. This will depend on which other disciplines within the local structure can become involved with children & adolescents. Would it be appropriate to consider other professionals already involved with children and adolescents' mental health problems (e.g. healers)? Is there a need to train existing trainers? What gaps can be identified in the training of generic/specialist professionals? (For example: mental health may not be included in nurses training).

Identification of the Training Team: The Training Team should be identified according to the request made by the host, and the need and availability of particular specialists. We may need to construct a Person Specification Checklist for the different members of the Team. Apart from professional expertise such a checklist will include other essential and desirable qualities such as:

Cultural sensitivity

An understanding of the risks of ethnocentrism with regard to one's own and another's views, lifestyles, parenting beliefs, religious practice, and so on

Ability to present one's own professional beliefs and views

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in a non-didactic manner, and to reflect on how these might be experienced by the host group

Ability to enjoy, appreciate and learn from the host society

Flexibility in adapting to diverse living circumstances and diets

Planning and implementing the training: Once the specific training needs have been identified and agreed, it will be necessary to design the structure of the training programme, curriculum, timing and frequency of visits. Local resources, work pressures and lifestyle will determine the timing of training sessions and the venue. We need to be aware of how our training contribution fits into existing training schemes. It may be appropriate to consider the resources for follow up training, supervision and ongoing support, and whether longer term links with us may be useful.

Matters regarding dissemination, monitoring, evaluation and sustainability are important and may be discussed with our hosts.

Content will depend on the task, and the needs of the target population. We need to be well prepared, and to remember that whatever the approach, the content will need to be flexible and responsive to local requirements.

Teaching and training materials may also be available on websites, where relevant it would be important to use these, and to make clear notes of what is, or is not, useful to specific contexts.

The course structure should include time for reflection, and to consider the course and the relevance of its content. This may lead to the generation of important research questions for the future.

Teaching Methodologies: While the subject matter and the aims of the course will determine the balance of methods, We need to consider which of the various teaching/ learning strategies, tools and methods listed will be acceptable to the participants[7] :

- Lectures/seminars
- Small groups
- Interactive sessions/workshops
- Case discussions - of individuals, or of local practices (i.e. the impact of these on children)
- We must keep in mind the fact that the content of the training is the primary consideration, and be prepared to change our training style, if necessary, to the style that participants feel most comfortable with (e.g. didactic lectures), even if this seems to the visiting team to be old fashioned.

Evaluation and Feedback: Outcomes relate to objectives. We need to consider these objectives with our hosts, and how to measure them. Cultural attitudes to authority may not easily permit feedback from trainees, and may need sensitive exploration before an acceptable strategy is devised.

WHAT to evaluate? There are two aspects:

1. Self- appraisal

- Did we meet the objectives jointly identified?
- What were the positive experiences, and what were the limitations and frustrations?
- What did we learn about our own theories and practice, and how could we use this?

2. Evaluation by local colleagues and participants

- The overall usefulness of the course
- Relevance of the course content
- Usefulness of training method and materials
- Personal skills or weaknesses of the training team (sensitivity, flexibility, attitude towards difference, openness to criticism)

HOW to evaluate?

Self-evaluation - written report or questionnaire that addresses our appraisal of the experience.

Evaluation of usefulness to participants - Some examples of how this may be obtained include

- Use of an independent evaluator. This may be necessary where the training has been funded by external agencies.
- Rating of participants on a task related to the course eg
- Discussion on management of a specific case
- Anonymous questionnaires to participants
- Focus group discussion
- Seeking feedback from leaders/ key persons within the host organization (as they may be prepared to be open and frank.
- Attendance at the various teaching sessions/ amount of discussion may indicate congruence of interest/ satisfaction
- Informal network through social activities.

Further dissemination of knowledge and skills:

Attention needs to be paid to hierarchies within the host organization when meeting with key people to discuss ways of disseminating the knowledge and skills gained through the course. The discussion may include issues of ongoing training, whether by developing exchange systems between organizations (and/or countries), and whether the training might be extended to other professional groups.

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Suicidal Behavior in Drug Abused Patients

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ABSTRACT

Drug addiction is one of the most burning problems of the whole world. A number of studies have shown that drug abuse is associated with a high risk for suicidal behavior, which is likely to reflect common contributing factors as well as the effects of drugs on mood. Alcohol and other drug use and abuse occur more frequently among youth and adults. Depression and drug abuse appear to be more lethal in combination than either factor is alone. Alcohol and other drugs abuse problems contribute to suicidal behavior in several ways. In addition to being depressed, they are also likely to have social and financial problems. Drug abuse can be common among persons who are impulsive, and among persons who engage in many types of high risk behaviors. There are a number of effective prevention efforts that reduce the risk for drug abuse. Future Research may direct treatments specifically for persons with drug abuse problems who also have suicidal ideations.

Key Words: Alcohol, Drug abuse, Suicide.

INTRODUCTION

In the fast changing scenario of the world, youths are considered to be the future assets of the nation. The young generation can contribute a lot for the welfare and advancement of the nation if their potentialities are channelized in the appropriate manner. But, if they indulge in undesirable activities like drug abuse, they can never utilize their potentials for self-growth or for the welfare and development of the nation [1]. Drug addiction is now considered to be one of the most burning problems of the whole world. The prevalence of an alarming growth rate of drug addiction warrants us to take immediate preventive steps for the proper utilization of human resources.

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Suicide, on the other hand, is definitely a tragic but potentially preventable public health problem. The word "Suicide" is derived from the modern Latin word *suicidium*, which derives from the Latin pronoun for self and verb to kill. Epidemiological studies have shown that young adults between 15 and 29 years of age, and middle-aged between 30 and 44 years of age were found to be the largest group committing suicides in India, respectively[2]. Two factors that have been established as increasing the risk of suicide are depression and hopelessness. In addition to these, alcohol consumption, dependence and other drug abuse have been found to play important roles in suicidal behavior [3]. Researchers studying on biological basis of suicide believe that both depression and suicidal behavior can be linked to decreased serotonin in the brain. Low levels of a serotonin metabolite, 5-HIAA, have been detected in cerebral spinal fluid in persons who have attempted suicide, as well as by postmortem studies examining certain brain regions of suicide victims [4].

Earlier research findings

Different studies have shown that alcohol consumption and alcohol dependence play important roles in suicidal behavior. Murphy, in a study of 913 adult alcoholics found that 17% of them had previous suicide attempts [5]. Completed suicide was found to be 120 times more prevalent among adult alcoholics than in the general population [6]. Moreover, suicide is considered as one of the very common means of violent death among adult alcoholics [7], with estimates suggesting that as high as 18% of all alcoholics die by suicide [8]. Alcohol continues to be the drug most widely used by adolescents [9]. Studies that examine risk factors among persons committing suicide, drug use and abuse occurs more frequently among youth and adults in comparison to older persons. Furthermore, some researchers believe that both suicide and drug use may be seen as maladaptive attempts to escape from an intolerable life situation [10].

Among the youth, different drugs of abuse have been found to increase the risk of suicide [11]. It has been seen that the rates of attempted suicide among drug abusers are comparable to those seen in alcoholic populations [12].

In a study of 298 adolescent patients abusing drugs like marijuana, hashish, and alcohol, 67% of them reported suicidal ideation, and 30% admitted with at least one prior suicide attempt [13]. Although drug misuse has been found to be an important predictor of adolescents and young adults who die by suicide [14], it is always difficult to separate the abuse of alcohol from other drugs [14, 15].

Gender differences

Research has clearly shown that the risk of suicide in persons abusing alcohol play a stronger role in males than females [8]. Gender differences also play an important role in depression [16] and suicide [17]. Adolescent females are more likely than males to attempt suicide, whereas adolescent males are more likely than females to die by suicide [17]. In a study of depressed outpatients, men were found to meet criteria for co-morbid drug abuse problems than women [18]. The study infers that adolescent females may be more likely to admit to higher levels of depression, but adolescent males may manifest their feelings of depression and loneliness through alcohol or drug abuse.

Biological basis

Co-morbidity between drug abuse and mental illness is very common. The high rate of co-morbidity probably reflects common contributing factors and brain substrates. A very important contributing factor is stress, which plays a vital role in drug abuse and in mental illness. Drug abuse is associated with a high risk for suicidal behavior and possibly reflects common precipitating factors as well as the effects of drugs on mood. The study involving cocaine abusers with a history of suicidal behavior have revealed a high rate of family history of suicide and childhood trauma. Moreover, the patients were found to be more introverted, neurotic, and hostile than cocaine abusers without a history of suicidal behavior. Biological research has found that chronic cocaine use may affect mood negatively, which may lead to high frequency of dysphoria and depression. Cocaine abusers also have reductions in brain dopamine D2 receptors and in dopamine release. These neuro-chemical changes in an individual with predisposing factors (environmental and psycho-social) for suicidal behavior may facilitate drug abuse and increase their risk for suicidal behavior [19-21].

Role of depressive reaction

Research has shown that depression and drug abuse were found to be more severe in combination than either factor is alone. Co-morbid depression may play an important role in attempted or completed suicidal act among alcoholics [6]. On the other hand, majority of alcoholics who have died by suicide had a co-morbid affective disorder [22]. Moreover, in the general population, adults who had depression with secondary alcohol abuse problem reported an increased risk of suicidal ideation or attempts when depressed [23]. Berglund in a large prospective follow-up study of 1312 alcohol abused patients found higher rates of depressive symptoms in those who eventually died by suicide during the follow-up period [24]. A point of clinical interest is that the suicidal intent does not abolish completely even after control of depressive episodes in the alcoholic patients.

Risk factors for suicidal behavior

Alcohol and other drug abuse may contribute to suicidal behavior in several ways. Persons who are dependent on drugs often have a number of risk factors for suicide. In addition to being depressed, they may have problems in family structure and in economy. A few researches have focused on the fact that alcohol consumption at the time of the suicidal attempt probably more important than the individual's long-term patterns of alcohol use [25]. Alcohol intoxication is often found immediately prior to the suicidal act [26]. Moreover, many adults who have committed suicide were reported to have discussed about suicidal intents only while drinking [22]. The short-term effects of alcohol intoxication may prompt sudden, impulsive suicide attempts[27]. Therefore, one way that long-term alcohol use can increase the risk of suicidal behavior is by lowering the person's inhibitions at the time of the attempt, making it more likely that a person who is having suicidal ideation will act on these ideas [28].

Alcohol abuse can increase suicide risk when it is used as a maladaptive means of coping with depression. Studies have revealed that the onset of depression precedes the alcohol abuse for the majority of adolescents diagnosed with both depression and drug abuse [29]. It is believed that an alcoholic person is likely to be depressed and possibly suicidal for some time. Such a dependence on alcohol with no possible solution of life-problems may convince the individual that there is no way out except suicide.

Role of emotional distress

Research has shed light on the relationship between hopelessness and suicide risk for both alcoholic and nonalcoholic adults. A study was carried out to examine the role of emotional distress and drug abuse in adolescents who were hospitalized for psychiatric treatment following a suicide attempt. It was revealed that the suicide risk was closely related to the severity of depression and hopelessness among adolescent females. But, among adolescent males, suicide risk was associated with depression but not hopelessness or substance use. These findings possibly suggest that for males, alcohol use is

related to suicide through its relationship with depression and hopelessness. Appropriate prevention programs, therefore, may need to be developed keeping in mind the effect of alcohol or other drugs of abuse on emotional distress [28].

Drug abuse and suicidal behavior among youths

Researches have examined the relationship between alcohol abuse and suicide among adolescents. Psycho-social factors like increased incidence of crime, easy availability of drugs, problems of unemployment and disorganized school systems in this era of rapid social destabilization because of rural-urban migration, provoke migrating adolescents to abuse drugs to find out an easy escape from the intolerable situation of cultural shock, role conflict and social rejection [30].The available evidence suggests that alcohol abuse may be particularly relevant to emotional distress and suicidal behavior among the young[31]. In a study of 1050 adolescents, suicide attempts were closely related to the co-morbid association of depression and alcohol or drug abuse [32]. Moreover, the rate of alcohol abuse has been found to be much higher in young adults (under age 30) who committed suicide [15]. Among young men high alcohol consumption was strongly associated with suicidal risk [33]. On the contrary, moderate to large amounts of alcohol consumption may precipitate severe depression in adolescents female [34].

Suicidal behavior among adult drug abusers

Drug abuse by adults may be more severe or more chronic than abuse by adolescents and possibly have a great influence on the lifestyle pattern. For example, alcohol may take several years of abuse to impart its devastating effect on the individual's physical health, family and social life, economical and employment status. By this way alcohol demonstrates a negative impact on the individual's psycho-social functioning and in turn, may lead to suicidal behavior. Moreover, depression often occurs as a secondary consequence of years of drug abuse among adults and thus increases the risk of suicide. The long-term consequences of alcohol abuse may start during adolescence, but the physical and social impairment may be manifested only after several years of abuse [35].

Research experience

In a recent study on suicidal behavior in 89 cases done in the primary care level of Sundarban region of West Bengal[36], the author found that drug abuse is associated with a high risk for suicidal behavior. The study showed that suicide attempt was common amongst those who were young (less than 30 years of age), female, poorly educated and married. Conflict with spouse was the commonest cause of suicidal attempt followed by conflict with parents. About 35% cases reported abuse of various drugs including alcohol in the family. Drug abuse (mainly alcohol) by the husband or other family members was found to increase the risk for domestic violence and thereby for self-harm behaviors. This study finding clearly highlights the contributing role of alcohol or other drugs of abuse in suicidal behaviors.

Preventive strategies

The prevention of suicide among drug abused patients is a very important area of community mental health research. Earlier studies on the prevention of adolescent suicide has found that the traditional prevention programs are beneficial for females but not for males [37]. Mental health professionals may need to develop suicide prevention programs for adolescent males focusing on the effect of alcohol abuse on emotional distress, especially depression and hopelessness. Early treatment of alcohol and other drug abuse is necessary when working with adolescent males, but the identification and treatment of co-morbid depression is an important strategy in suicide prevention, regardless of drug abuse issues [22]. Studies have shown that the early identification and treatment of even minor depression may reduce the risk of alcohol use as a maladaptive coping method for managing emotional distress[9].

CONCLUSION

The relationship between suicide and drug abuse is a complex phenomenon. Both alcohol and other drug abuse and suicide risk can influence and can be influenced by biological and psycho-social factors. Family history of depression, suicide, or drug abuse may predispose an individual to develop these problems. Similarly, conflict in family or interpersonal loss may increase the emotional distress and risk of suicide in an individual. Clinicians should always evaluate suicide risk with patients who abuse alcohol or any other drug when significant life events occur [38]. Effective prevention programs should be implemented on an urgent basis to reduce the risk for drug abuse and suicide. Future research may highlight improved management strategies for drug abused patients with suicidal ideations.

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TRAUMA REPETITION : INTERVENTION IN PSYCHOLOGICALLY SAFE PLACES

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In my early exposure to the psychological disaster field, I learned about two kinds of psychic traumas. The first being Trauma with capital "T" in which there is "a strong overwhelming event that renders an individual temporarily helpless and unable to use ordinary coping and defensive operations of ego in the face of intolerable danger, anxiety or instinctual arousal" [1]. The second being a small trauma that consists of several smaller stressful events that might produce, with their cumulative effects, destabilization of the individual's psychic equilibrium and stimulus barrier.

My experience taught me that these definitions could be an oversimplification of reality. But it also led me toward a couple of questions: what happens when a big Traumatic experience, a strong overwhelming event, is recurring just as much as the small ones? And what can a mental health professional do to be supportive in such occurrences?

In considering these questions and the issues related to them, I will focus on the occurrence of multiple disasters based on my trauma work experience in Palestine.

The following pages will consider, in particular, children's reactions according to their environmental and psychosocial problems and the related possibilities of psychological intervention. To start, I will address some of the features of the Occupied Territories Scenario that led to the following considerations.

A Personal Note:

The idea for this article was stimulated by recent happenings in Gaza, even though I worked in Palestine occupied territories and in the Gaza strip in 2005/ 2006. I would l like to state that what I am writing has no political connotations nor is it meant to address rights or wrongs. Rather its intent is to deal with the issue of being supportive in a potentially traumatic situation where there are no prospects of future improvement.

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In focusing on multiple recurrent trauma, I am specifically referring to the experiences of Palestine and Palestinian children where I had personal experiences. The absence of mentioning any other similar situations is due to my lack of direct personal experience and was not intended to underestimate other circumstances of suffering.

PALESTINE AND RECURRING DISASTERS

Disasters, either natural or human-made, are characterized by large-scale damage that overwhelms the social structure and impairs the social functioning [2]. These crisis events leave the people with their pain and fears, causing them to live in extremely stressful conditions. In most cases a disaster will "physically" leave the population safe from recurrences of potential new threats, but often though not "psychologically."

The Palestinian Scenario in Occupied Territories is quite unique due to the combination of three factors:

Human-made disasters involve specific additional elements as compared to natural disasters that cause extreme stress;

Critical circumstances are overwhelming and potentially harmful events are still taking place;

Disaster occurrences last for a very long time and there is no clear prospect of improvement.

CHILDREN'S CONDITION AFTER A TRAUMATIC EVENT

Critical life events and psychological suffering

Life events affect the individual's psychological condition. Every situation that exceed one's capability to adapt produces anxiety which can interfere with the individual's normal functioning. The events that are most critical for the individual's well being and results in the greatest potential impairment are: "personal experiences or witnessing of life-threatening events or serious injuries, or physical threats to the integrity of self or others". These circumstances can create a condition of severe psychological suffering, such as PTSD" [3]. Gilliland and James (1997) [4] maintain that severe affective, cognitive and behavioral malfunctioning might be caused even when

these threats are just "perceived' as such.

With specific regard to children, we should add that "every experience that exceeds their control and their capacity to cope is anxiety provoking and potentially traumatizing". Even though there are several criteria (individual, social and environmental) influencing the individual's sense of vulnerability, "no one is to be considered immune from the occurrence of psychological symptoms in the aftermath of a critical event" [5]. This applies in particular to children who are more vulnerable to stress than adults "because they have had fewer opportunities, by virtue of their younger ages, to develop a wide range of coping mechanisms to events" [6] and because "they bear the burden of being the least able to voice their feelings and fears [7].

Moreover, as it is probably easy to figure, critical events in childhood, have a greater biopsychological impact on their condition and on their personality development compared to adulthood. "Trauma in childhood can disrupt normal developmental maturation" [8] and sometimes leave permanent consequences in a way that as Perry said, "a piece of the child is lost forever" [9] .

Environmental and Psychosocial Problems in Palestine

I will highlight those environmental and psychosocial problems listed in the DSM-IV-TR [3] that are recurrent in the daily life of most of the people living in Occupied Territories :

Problems with primary support group - e.g. death of family member, health problems in the family; disruption of family, removal from home, etc.

Problems related to the social environment e.g. death or loss of friend, inadequate social support.

Educational problems - e.g. inadequate (*insecure)* school environment

Occupational problems

Housing problems - e.g. inadequate housing, unsafe neighborhood

Economic problems

Problems related interaction with legal system/crime e.g. arrest, incarceration, litigation, victim of crime.

Other psychosocial and environmental problems - e.g. exposure to disasters, war, other hostilities.

The Psychological Condition of Psychic Trauma

The above listed events and circumstances have the potential to cause either a psychic trauma as intended by Freud, as a process initiated by an immediate situation which confronts an individual with an acute overwhelming threat, and a cumulative trauma, that instead originates from attenuated but repeated psychic insult or emotional deprivation [1]. The aim of this section is to describe a general framework of psychic trauma in order to reflect on the possibility of intervention.

The general picture of the impact of Psychic trauma on individuals usually involves the following conditions [10]:

- Hyper-arousal.

- Helplessness, powerlessness.

- Difficulty or incapability (or to be dependent on others for) to act in a suitable way according to danger, take care of himself and of personal security.

- Cognitive modification with relation to the way the individual looks at him/herself, others and the world.

- Incapability of assimilating the traumatic experience.

The person might also react as if the event is going to happen again.

"Specifically when enough of their sensations match the imprints from the original trauma these people activate biological systems that make them react as if they were being traumatized anew" [10] .

Even though there is not unanimous consensus on the possibility that children develop the same symptoms of adults, it is quite accepted that there are some reactions in common and that there are several others that are age related. Listed below are symptoms [3, 6] related to different developmental age periods.

Among the most common symptoms for infants are that they become very dependent, cling to parents, fear separation, have arousal symptoms such as being easily startled and irritabile, and crying and a deep sense of shame. Preschoolers are likely to report nightmares of monsters, have a tendency to relive trauma in their play without realizing they are doing it, display regressive behaviors (encopresis, enuresis) and somatic complaints (headaches and stomachaches). Symptoms in school-age children include a reduced interest in customary activities, a foreshortened sense of the future which may be expressed, as well as omen formation (belief in the ability to predict future calamities), verbal or physical aggression, elaborate post traumatic play with possible involvement of friends in the reenactment, and guilt over actions taken. Adolescents, unlike younger children, might show adult-like PTSD symptoms including flashbacks, preoccupation with concerns secondary to the traumatic event (parental punishment), increased drug and alcohol use, and fighting with parents and/or siblings.

Psychological Intervention

"The negative impact of trauma can be extensive and long-term if left unnoticed and untreated". The presence

of one or another reaction noted above (apart from the post- traumatic play) does not mean that a severe post-traumatic reaction is taking place, even though the persistence of one or more of them suggests that the possibility of psychological intervention should be considered[6].

There are a variety of possible interventions with regard to the support and treatment of individuals affected by critical events. The differences are related to the duration of the intervention, the clinical approach and the specific aims of the intervention itself. What each has in common is the starting point aimed "to stabilize the situation by helping individuals or groups to feel safe" [10, 11].

The key factors in determining psychic trauma and malfunctioning are overwhelming, threatening and harmful events together with the perception of lack of control, therefore the supporting process should "start with the establishment of an environment that has some predictability and safety" [12].

Jung used the term *temanos* to describe the safe and welcoming space of therapy[13], since the aim of therapy is to "provide a troubled child a safe place from physical and psychological harm, where she can let her guard down sufficiently to explore her thoughts, feelings, and life"[14]. The issue of safety is an essential basis in all therapeutic contexts, and it is easy to imagine how valuable it is in the context of recurrent critical events.

Once the individual feels safe, he is ready to begin the course to regain psychic equilibrium and process his trauma, integrating traumatic memories, slowly recovering his self-regulation[7], re-establishing social connections, retrieving previously practiced coping skills or learning new ones.

Programs providing psychological support in disaster situations are increasingly founding their intervention upon the creation of safe places. Whether the interventions are time-limited or intensive long term, the underlying principle of a safe place is to offer a place where people are secure from potential harm or threat. A place where social connections can be re-established, a sense of predictability is determined and where cognitive and belief distortions can be identified and reframed. In long term interventions when the feeling of safety is regained then different psychological and social problems can be identified and then addressed.

Psychological Intervention in Palestine

Hopelessness and helplessness very often accompany traumatic circumstances even when a setting of physical and social security is reestablished. But what happens to people when these aspects continue to be insecure?

Together with my colleagues of the Palestinian Red Cross Society, when we were establishing our psychosocial centers in Bethlehem, Hebron and Khan Yunis in Gaza city, I realized that the cornerstone of our program of support could not be put into place. Physical safety could not be provided; reassurance about future potential harmful happenings could not be granted even in the psychosocial centers. The very basis of those centers could not be applied. So what kind of intervention could actually be done in order to be helpful and supportive?

A Psychological Safe Place

What could be done, and actually is still done, is to create a context where some level of psychological safety could be fostered, in order to give a chance for what Williams-Grey (1999)[15] called "emotional refueling".

The idea of a "psychological safe" place is to create a place where, regardless of the external contingencies, it is possible to take distance from reality, make connections with other people in the same condition, foster respect for each other, enhance some level of predictability, and where the complete expression of oneself could be insured.

How to Create a Psychological Safe Place: The Power of Relationship and the Power of Play

The idea of a psychological safe place rests upon the assumption that some level of psychological safety can be enhanced even in difficult, unpredictable contexts, when such a setting is based upon certain conditions (place, space, material and other facilities), techniques and most of all upon specific factors. Factor here is meant as an element, a power or a dynamic with intrinsic positive therapeutic effect [16].

Among all the possible characteristics, the core issue in creating a context of psychological safety is "the careful consideration and professional application" of two special factors: the power of play and the power of relationship.

The next paragraphs underline why these two elements are so important, how they can foster psychological safety and on what basis psychological safety can be effective in providing support to children living in "an out of control and overwhelming" context.

The Power of Relationship

"The most important single influence in the life of a person is another person"[17]. Relationships are extremely powerful and even if I doubted it myself, I've seen how it can be supportive and can even make a difference in highly overwhelming contexts such as with human-made disasters. Gramezy[17] found that "the presence of at least one supportive, caring person in the life of a youngster exposed to war, loss of total family and other horrors could

make the difference in maintaining positive mental health".

Allen (1939)[18] and later Rogers underscored the relevance of the relationship as a major therapeutic factor. According to Rogers the therapist's personal attitude is more effective in the relationship than his professional training, his professional orientation and his techniques[19, 20]. Not all approaches share this view, even though "all child therapeutic approaches would acknowledge the value of the positive child-therapist relationship"[17]. Relationship can be by itself a powerful means and at the same time a very sensitive issue. With people living in extremely stressful circumstances the therapeutic relationship "is a cornerstone of effective treatment; it tends to be extraordinarily complex, particularly since interpersonal aspects of the trauma, such as mistrust, betrayal, dependency, love and hate tend to be replayed within the therapeutic dyad"[8] .

Considering the "potential" of relationships and Allen's thoughts regarding these circumstances, it is important to give particular emphasis to relationships as Allen (1939) [18]stated " it is the quality of the relationship that determines the therapeutic outcome". In this regard Rogers (1962)[19] suggested some essential attitudes that the therapist should develop in order to establish a "psychologically safe", effective and supportive relationship:

- Authenticity
- Genuineness
- Warmth
- Respect
- Positive and unconditional consideration
- Non-possessive acceptance.

This last point is probably the most important. As pointed out by Allen once "the client is accepted, he has an opportunity to go ahead with his difficulties that are most concerning to him. He is not kept busy defending himself against being helped and being remade".

Particularly in the circumstances described, these attitudes do not pertain just to mental health professionals, but also other professionals working with children (in a centre, or school, or other social places) can be trained properly and contribute to creating an atmosphere of acceptance and psychological safety.

The experience of Palestine made clear for me another key factor connected to the relationship: "modeling". Where helplessness, a hopeless lack in future perspective, and a strong sense of vulnerability reign, children's relationship with people who are competent in their profession, self-confident and playful, and prove daily the efficacy of their coping skills, offers a great opportunity for enhancing their (the child's) perception of safety, developing more positive future perspectives, and for giving positive examples to consider or model.

In talking about relationship and support, it would be important to comment on the child's relationship with parents, even though this topic does not strictly pertain to the discussion of centers. As can be imagined family members are an essential element for the child's wellbeing, since "children and adolescents with greater family support and less parental distress have lower levels of PTSD symptoms".Even the early relationship with parents is relevant as it is stated by Herman (1992)[12] that the "early bonding with parents that establishes trust, predictability and security often translates into healthy resolution of normative developmental tasks and adaptive responses to difficult life stressors". On the whole "families have a huge bearing on how their members respond to trauma." The manner of their reaction can "help or hurt the process of recovery of the child"[6], and in this regard a psychological safe place may play an important role in giving parents the opportunity for "emotional refueling" and valuable knowledge about the importance and the power of relationship and play.

The power of play

Play gives children the opportunity to change their passivity in the face of events into activity and creativity. In play children can be fully themselves, elaborate and master critical events, have fun, rewrite a reality that they like better and that fits more with their feelings, aspiration and hope.

"Play is a singular central activity of childhood, occurring at all times and in all places". Play is powerful because it is the child's language. "During play children can express what they want to express in any way they wish. Play does not require translation; it simply exist as language"[21]. With regard to children's psychological suffering and to the conditions previously described, the importance of play is extremely relevant because it is "intrinsically complete, does not depend on external reward and assimilates the world to match the individual's concept as in the case of a child pretending a block of wood is an airplane"[21].

Charles Schaefer[16, 22] identified several therapeutic factors of play, which are "elements in the play that exert a beneficial effect on the client", in the sense of a decrease in symptom or an increase in desired behavior. Even though the "child's resilience and their innate ability to play out what they need can allow for self healing", there are conditions that can prevent this process such as "the child does not have a solid emotional foundation, the lack of family support"[23], and the frequency and the intensity of critical events continue a sense of insecurity and vulnerability.

In these cases professionals can intervene to facilitate and support children's natural self- healing course with a play therapy intervention.

Play therapy is the "the systematic use of a theoretical model to establish an interpersonal process wherein trained play therapists use the therapeutic powers of play to help clients prevent or resolve psychosocial difficulties and achieve optimal growth and development"[24].

The following paragraphs are specifically aimed to highlight the importance of some of these factors in relation to repetitive trauma and other critical circumstances. A comprehensive overview of the therapeutic powers of play can be find in Charles Schaefer's work [16, 22] .

Play therapy factors

The application of play therapy to support children in relation to critical circumstances "is based upon the idea of exploiting the natural healing mechanisms of children" . In play therapy "there is a diversity of theoretical approaches that are currently being applied in clinical practice" and there is not a single one that fit with all situations[25] .The effectiveness of play therapy is not the result of differences in methodologies or techniques but relies on intrinsic agents of change or play therapy factors present in the play itself.

Below those factors considered more relevant according to the trauma situations so far described are introduced below.

FANTASY

Among all therapeutic powers of play fantasy and imagination are probably the biggest ally for children in a scenario that does not leave too much space for hope and a new positive perspective. Christiensen, the inventor of Lego[16] said "the world of a child is as infinite as his imagination". Play encourages the use of fantasy and imagination and in a place where "to remove or act upon the stressor environment are severely limited"[26], one of the most important roles for professionals would be to establish suitable conditions for children to encourage the expression of their fantasy and imagination.

In the world of fantasy and pretend play the external poor and hopeless world ceases to exist for a moment and does not count. The children "have the chance to "compensate for their real life weaknesses and their losses and satisfy their unmet needs"[16].

POWER AND CONTROL

Strictly connected with the previous point is the issue of power and control, which as it has been previously discussed, is a core element in psychic traumas. Play is an environment which children can control. "It is this sense or feeling of control rather than actual control, which is essential to emotional development and positive to mental health."

Playing allows the child to set a therapeutic distance from traumatic circumstances and to restore positive emotional affect[25], and it allows the child to make reality conform to their wishes and needs[22].

CATHARSIS AND EMOTIONAL RELEASE

Catharsis is defined by Nichols & Efran[22] as an activity that involves completing some or all of a previously restrained or interrupted sequence of self expression, such as crying or hitting. Together with some of the other play therapy factors, it can powerfully influence the reduction of anxiety and all those reactions linked to hypervigilance.

In a play setting the ways in which a child can find emotional release are as endless as his fantasy. Cars hitting, playing with swords, acting as a doctor, playing rescuer and rescued, hitting a punching ball, dolls fighting, etc., practically everything in the hands of children, when an atmosphere of safety and trust is built, have the potential to allow him or her the arousal and discharge of strong emotions.

COGNITIVE REAPPRAISAL

Play sessions in an enjoyable and natural setting gives the child the unique possibility to explore and identify dysfunctional thoughts and beliefs and offers the possibility to correct and reframe them.

ABREACTION INTEGRATION OF TRAUMATIC EVENTS

The core issue in individuals that develop PTSD is that traumatic experiences are imprinted as sensations or feeling states and are not categorized and integrated with other experiences[27]. The treatment of the traumatized individual should focus on elaboration of those experiences not inserted in one's personal narrative[28].

This process of elaboration is naturally performed in children through play. Children deal with stress and traumas by playing out similar situations and gradually achieving mastery over them. In play the child is in control of the events and there is less anxiety because it is just pretend[21]. The therapist's role, in many cases would be just setting suitable conditions to make this process happen by itself. The therapist's task would be to arrange a suitable space and time, create a "acceptant atmosphere" and a trustful relationship to offer the possibility for the reenactment play to occur. When this process does not take place naturally, because the "child would never play out or deal with the issues of their abuse or trauma, finding it hard to remember all the details or that it was too overwhelming to approach"[25], the therapist can instead guide the child

through structured play.

The therapist can present some miniatures that represent the trauma scene and encourage the child to re-experience the event in a different way and with a more positive outcome than the original event. Considering the sensitivity of the issue, in order for the reenactment to be beneficial, the therapist should consider several specific therapeutic processes , even though different methodologies can be applied[25, 29] .

CONCLUSION

Conditions of recurrent trauma as those previously described have a higher level of criticalness to the point that even professionals might feel helpless themselves. In such asituation is any possible psychological support program effective and as consequence worthwhile to utilize?

What as been presented results in a positive answer. van der Kolk (2002)[10] maintains that after a traumatic event the response given by the rescuer or by the humanitarian care organization, can foster a sense of not being alone in the face of the tragedy, to be cared about, that there is interest in him or her, and that the world is not that bad. In these cases when this response is performed "genuinely" (according to Rogers' meaning) it is likely that some hope can be instilled. When a program or protocol dedicated to children gives consideration to the relevance of play and relationship, the efficacy is still further maximized. Relationship and play have intrinsic therapeutic factors.Authentic relationships give children the possibility to feel free in their play, and play activities enforce the relationship itself and establishes the base for a positive alliance. A careful and professional use of relationship and play might create an atmosphere where a child can have "power over the world even when he does not have much control in real life"[16] .

A sense of psychological safety can be slowly enhanced and this represents the essential foundation for any aid applied to critical circumstances and an objective that by itself is good enough to plan any intervention.

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