

JMHS
JOURNAL OF MEDICINE AND HEALTH SCIENCES

EDITORIAL BOARD

PATRON in CHIEF

Professor Dr. Ishaq Khan, YMDC

EDITOR in CHIEF

Prof. Dr. Javid Shabbir

EDITOR

Dr. Iqra Naseem, Assistant Professor, YMDC

ASSOCIATE EDITOR

Dr. Mohammad Saeed Akhtar

Dr. Mansoor A Sheik

Dr. Shahida Mansoor

Dr. Imran Mansoor

Brig (R) Prof. Dr. Sheikh Ishaq Ahmed

Dr. M. T. Asghar

Dr. Saima Bilal

Dr. Taskeen Fatima

EDITORIAL ADVISORY BOARD

Brig (R) Prof. Dr. Mohammad Sultan Muzaffar

Dr. Javed Ahmad

Dr. Jamal

Dr. Shehnaz Muzaffar

Dr. Atika Bashir

Dr. Hameed Ullah Khan

INTERNATIONAL EDITORIAL ADVISORY BOARD

Dr. Juniad. I. Khan (USA)

Dr. Usman Mansoor

Dr. Amir Fazil

Farah Saeed (N.J)

Prof. Dr. Shahab (USA)

Prof. Dr. Abeer M Al Hrabai (Saudia Arabia)

Dr. Hina Mansoor

Prof. Dr. Javed Ahmad (UKSA)

Miss Salma M

Haider Ali Saeed (UK)

SCOPE OF JOURNAL

Journal of Medicine and Health Sciences, publishes scholarly research focusing on the various fields in the areas of health and medical education. It publishes original research describing recent advances in medical field particularly clinical studies, clinical trials and assessment of pathogens of diagnostic importance, medical genetics and epidemiological studies. Review articles highlighting importance of various issues in the domain of pharmacology, biotechnology, molecular biology, rehabilitation sciences, allied health sciences, public health, drug research and medical education are also accepted.

We cordially invite and encourage scholars to write short reviews and invited editorials on the emerging issues will be highly recommended. We particularly aim to promote advancements made in the field of neurosciences in developing countries by encouraging manuscript submissions on issues affecting overall life quality of an individual due to any particular neurological disorder or ischemic cerebrovascular incident followed by dire rehabilitation goals and protocols.

Submission for Publications

An efficient system of article submission process governed by the editorial board comprising experts from the various fields of medical and allied health sciences and also well supported by the efficient staff members assure timely feedback and processing of publications.

INSTRUCTION TO AUTHORS

All material can be sent electronically, in Microsoft Word format, on www.miihs.org/journal/ by logging in as author. The journal welcomes the submission of manuscripts that fulfill the general criteria of significance and utility in medical practice. In order to comply with the format of the journal, visit our website and look into the format of any published article. The journal welcomes editorials, original articles, case reports, short communications and review articles with an emphasis on original articles. The instructions for the original articles are provided below.

1. **Authorship declaration form:** Give an undertaking that “This paper is the original research work of the authors and has not been submitted for a concurrent publication or published before in any other journal. This declaration form should be completed and attached at the time of submission which includes the corresponding authors full address, telephone (Cell and landline) numbers, place of work, degrees and designations and contact numbers along with email of all the authors, letter of the undertaking can be downloaded from website www.miihs.org/journal/.
2. **Ethical Review Board Letter:** A letter from the institutional ethical review board of the place of research must be attached which should be issued prior to commencement of research. In case of absence of the ethical review board, the ethical declaration form must be completed.
3. **General Format:** The length of the paper should not exceed 2000 words, (excluding abstract and references), complete sentences, active verbs, past tense and the third person language should be used. Each abbreviation should be spelled out and introduced in parenthesis. The first time it is used in the text.
4. **Title:** It should be a brief phrase describing the contents of the paper.
5. **Abstract:** It should be informative and must reflect the study conducted. It must be structured including background, methods, results, conclusion and key words. For the original article around 250 words abstracts suffices.
6. **Introduction:** Should provide a clear statement of the problem, the relevant literature on the subject and the proposed approach of the solution. It should be understandable from a broad range of scientific disciplines.
7. **Methodology:** Should be complete enough to allow experiments to be reproduced. Study designs and methods for the data analysis must be described in detail. Sample size

calculation method must be mentioned. It is recommended that data must be analyzed using SPSS.

8. **Results:** Should be presented with clarity and precision. Result section should include self- explanatory tables, illustrations and graphs.
9. **Discussion:** There shouldn't be any repetition of what has been already mentioned in the introduction section, compare and rationalize your findings with the previous evidence. Limitations and future prospects must be mentioned as well.
10. **References:** There must be 20 to 25 references along with each article starting from the latest one, Vancouver style is accepted and references must be given using endnote software.
11. **Plagiarism:** Only 19% similarity index is accepted.

Clinical features, diagnosis and management of hyperactive personality

Ishaq Khan¹, Sultan Muzaffar², Usman Mansoor³, S. Shahab⁴

1. Professor, Department of Neurosciences, University of Weldon, USA
2. Professor, Department of Surgery, YMDC
3. Consultant Psychiatrist, ZIHS
4. Consultant Cardiologist, Department of Cardiology, Washington DC Hospital, USA

ABSTRACT

Objectives: To evaluate clinical features, diagnostic criteria and management guidelines in individuals with hyperactive personality.

Methodology: A descriptive case study was conducted at Mediks international Hospital and Research center from July 2018 to September 2019 including 200 participants (diagnosed with Attention deficit hyperactive personality Disorder, ADHD) aged between 1 to 3 years fulfilling inclusion criterion were enrolled after taking ethical permission from their parents. A self-structured questionnaire was specially designed consisting of six domains was used for assessment. Skull X-rays, brain MRI's, EEG and IQ assessment of every participant was done at Mediks hospital. Data was analyzed via SPSS version 25 (Statistical package for social sciences) software. Chi-square test was applied at 5% level of significance and p-value of less than 0.05 was considered to be significant.

Results: 200 hyperactive children aged between 3 to 6 years were enrolled in the study, out of them 62% were males and 38% were females showing major predominance of male participants. IGIV administration showed mild improvement in 59%, moderate in 30% and maximum in 11% participants. IQ assessment showed that 50% of participants had IQ score below borderline whereas 23% had normal score. Anomalies seen in skull x-ray and brain MRI leading to ADHD, reported that 61% congenital microcephaly 25% had underdeveloped cerebral cortex, 45% were diagnosed with tuberous sclerosis and 20% had Arnold chiari malformation. P-value less than 0.05 suggests that all the findings are significant. Pre-natal maternal causes of ADHD, showed that 37.5% mothers had cytomegalo/rubella virus infection, 7.5% were obese and diabetic, 20% were above 35 years of age, 10% gave history of teratogen and pesticide exposure, and 2.5% reported alcohol abuse. As per the findings, post-natal causes observed were Vitamin D deficiency in 5%, Metal toxicity in 2.5% and Viral infection in 10% participants. P-value less than 0.05 suggests that all the findings are significant.

Conclusion: ADHD is characterized by difficulty in sustaining attention, hyperactivity and impulsive behavior. It can be managed by effective counselling and psychotherapy sessions along with IGIV administration and combination of anxiolytics, sedatives and muscle relaxants.

Key words: ADHD, Impulsive behavior, Inattention, Genetic factors, Toxins

INTRODUCTION

ADHD is a disorder characterized by hyperactivity, inattention and impulsive behavior compromising quality of life. It is a neurodevelopmental disorder reported due to genetic and non-genetic factors i.e. environmental factors [1]. ADHD interferes with normal physiological and psychological functioning of an individual. It runs in families and is strongly associated with increased age of father and mother [2-3]. Tuberous sclerosis and X-fragile syndrome serves to be the most potent genetic cause of ADHD [4]. Prenatal causes of ADHD are alcohol abuse [5-6], maternal diabetes and obesity, teratogen and pesticide exposure or untreated phenylketonuria, peri- natal causes are premature birth [7], birth asphyxia and low birth weight where-as post-natal causes are vitamin D deficiency, viral infection and metal toxicity [8]. Children diagnosed with ADHD have been categorized into three different patterns as per their symptomatic manifestations. The disorder is triad of three complications inattention [9], that makes a child wander away from tasks assigned to him/her and lack of persistence is its major component along with difficulty in focusing on targets, as a result effected individual can't comprehend things properly and seems disorganized all the time [10-11]. In addition to inattention, hyperactivity results in constant restlessness forcing an individual to move constantly from one place to another or from one task to another without any particular reason whereas impulsivity adds up hastiness to ADHD victims [12], therefore they take quick decisions without

focusing or considering long term consequences and expect immediate responses else they can't cope up with delay and badly lacks patience in their personalities. Individuals with ADHD lack multi-tasking ability [13-14] and have poor cognition followed by poor time management [15]. They seem quite disorganized and have impaired communication skills that involves their reading, writing and speaking skills. In addition to this they lack creativity and have poor IQ as compare to peers of their age. Individuals diagnosed with this disorder easily become victim of depression and anxiety disorders. ADHD is usually seen in children ranging from 3 to 6 years of age but in few cases it is seen in adults as well. Clinical manifestations of ADHD cases involves poor appetite, disordered thinking, insomnia, restlessness, headache, anxiety, irritability, personality changes and aggressive attitude [16-17-18]. ADHD can be treated and prevented from further worsening with the help of behavioral, cognition psychological and physical therapy as there isn't any significant treatment method for this disorder, usually an amalgam of different therapeutic protocols is followed for the sake of treatment. In addition to these therapies, ADHD responds well to dopamine agonists as they works as stimulants and release of dopamine improves focus of an individual [19]. Recent advances in research have showed that adequate and prompt administration of open label intravenous immunoglobulin [20] not only reduce severity of the symptoms in fact it can stop

further processing of the disease as well. The purpose of this study is to highlight the causes and treatment methods for ADHD among our community so that people must have awareness about the fact that it can be treated.

PATIENTS AND METHODS

A descriptive cross-sectional study was conducted at mediks international hospital from June 2017 to July 2019 including 200 participants (diagnosed with autism) aged between 3 to 6 years fulfilling inclusion criterion (no associated history of spinal cord anomaly, trauma and surgery) were enrolled after taking ethical permission from their parents. A self-structured questionnaire was specially designed consisting of six domains covering structural brain and skull anomaly, child's IQ, EEG findings, family

history of autistic siblings and relatives, maternal history of alcohol abuse, obesity, diabetes and viral infection and administration of IGIV was used for assessment. Skull X-rays, brain MRI's, EEG and IQ assessment of every participant was done at Mediks hospital to evaluate the most probable etiology of autism in our community. Improvement was recorded in patients after administration of IGIV, and provision of anxiolytics, sedatives and muscle relaxants via using a simplified questionnaire. Data was analyzed via SPSS version 21 (Statistical package for social sciences) software. Continuous variables had mean and Standard deviation calculated whereas frequency/percentage was calculated for categorical variables. Chi-square test was applied at 5% level of significance and p-value of less than 0.05 was considered to be significant.

RESULTS

Figure 1: Pie-chart showing gender distribution of participants

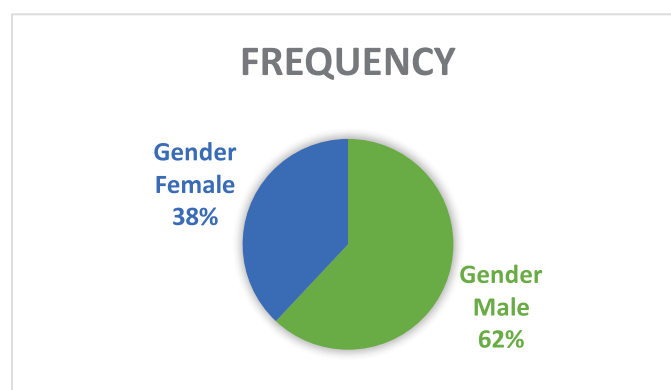


Figure 2: Bar chart showing frequency of IQ scoring of Participants

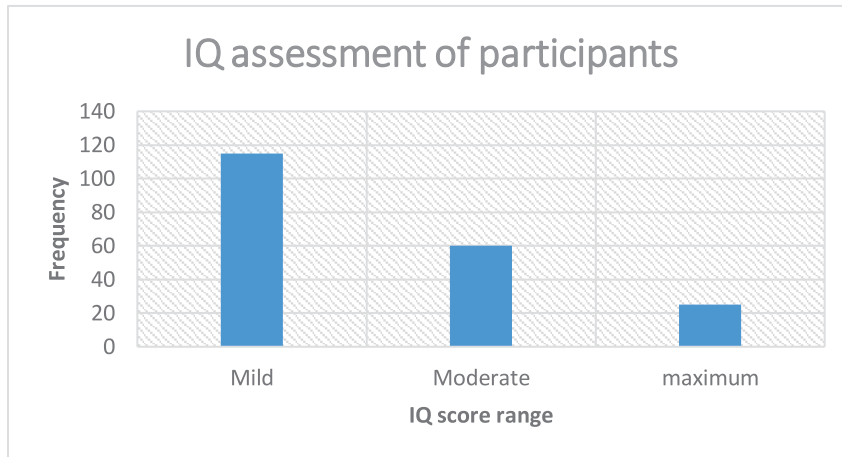


Figure 2 shows that (N=100, 50%) of participants had IQ score below borderline whereas (N=44, 22%) showed dullness and (N=46, 23%) had normal score.

Figure 3: Bar chart showing frequency of Improvement after administration of IGIV as immunotherapy

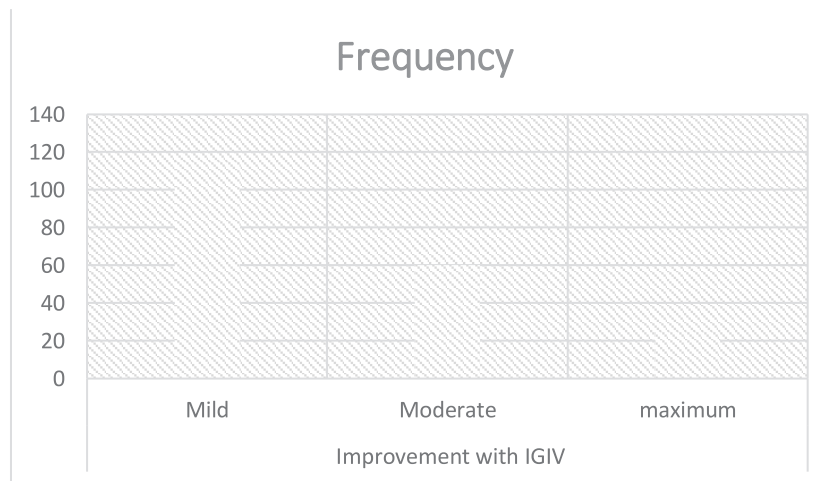


Figure 3 shows that (N=118, 59%) showed mild improvement in terms of reduction of their symptoms upon administration of IGIV whereas (N=60, 30%) showed moderate and (N=22, 11%) maximum improvement.

Table 1: Interpretation of brain MRI and Skull X-ray responsible for genetic causes of ADHD

Variables	Frequency/percentage	P-value
Skull X-ray		
Microcephaly	N=122, 61%	0.001
Brain MRI		
Underdeveloped Cerebral cortex	N=50, 25%	0.002
Tuberous sclerosis	N=90, 45%	0.000
Arnold chiari malformation	N=40, 20%	0.001
Poor grey and white matter contrast	N=20, 10%	0.004

Table 1 shows anomalies seen in skull x-ray and brain MRI leading to ADHD, as per the findings out of total 200 participants (N=122, 61%) reported congenital microcephaly upon x-ray examination. MRI findings reported that (N=50, 25%) had underdeveloped cerebral cortex, (N=90, 45%) were diagnosed with tuberous sclerosis, (N=40, 20%) had Arnold chiari malformation and (N=20, 10%) had poor grey and white matter contrast. P-value less than 0.05 suggests that all the findings are significant.

Table 2: Frequency table showing non-genetic causes of ADHD

Variables	Frequency/percentage	P-value
Pre-natal causes		
Cytomegalo /rubella viral infection	N=75, 37.5%	0.000
Obesity/ Diabetes	N=15, 7.5%	0.001
Age above 35	N=40, 20%	0.000
Teratogen & Pesticide exposure	N=20, 10%	0.002
Alcohol abuse	N=5, 2.5%	0.003
Post-natal causes		
Vitamin D deficiency	N=10, 5%	0.000
Metal toxicity	N=5, 2.5%	0.004
Viral infection	N=20, 10%	0.001

Table 2 shows frequency of pre-natal maternal causes of ADHD, out of total 200 participants, (N=75, 37.5%) mothers had cytomegalo/rubella virus infection, (N=15, 7.5%) were obese and diabetic, (N=40, 20%) were above 35 years of age, (N=20, 10%) gave history of teratogen and pesticide exposure, (N=5, 2.5%) reported alcohol abuse. As per the findings post-natal causes observed were Vitamin D deficiency in (N=10, 5%), Metal toxicity in (N=5, 2.5%) and Viral infection in (N=20, 10%) participants. P-value less than 0.05 suggests that all the findings are significant.

Table 3: Frequency Table showing Effectiveness of Psychotherapy, anxiolytics, sedatives and muscle relaxants in reducing symptoms of ADHD

Variable	N=200	Reduction in symptoms (Yes/NO)	P-value
Psychotherapy sessions	118/59%	Yes	0.000
Prompt availability of anxiolytics	120 /60%	Yes	0.001
Regular intake of sedatives	150/75%	Yes	0.002
Regular Follow ups	160/80%	Yes	0.003

Table 3 shows that out of 200 participants (N=118/59%) considered psychotherapy session by the doctors to be highly effective in reducing symptoms of ADHD, (N=120/60%) believed availability of anxiolytics is more effective and necessary, (N=150/75%) considered regular intake of

DISCUSSION

ADHD is a complex neurodevelopmental and behavioral disorder characterized by prominent features of inattention, hyperactivity and impulsiveness along with communication and speech dysfunction, psychosocial disturbance, aggression and anger issues, emotional liability, enhanced sensitivity to normal stimuli and rigid body movements [1-2]. Hesslinger B et.al conducted a study to rule out pathogenesis of ADHD and he found underdeveloped cerebral cortex, microcephaly and tuberos sclerosis to be the most potent genetic causes of Attention deficit hyperactive disorder [17], the current study showed major predominance of microcephalic and tuberous sclerotic cases lead to ADHD among participants. Previous researches

sedatives to be highly effective whereas (N=160/80%) believed regular Follow ups and adherence to treatment protocols reduces symptoms and improves quality of treatment. P-value less than 0.05 suggests that observed findings are significant.

suggest that boys are more prone to ADHD as compared to girls with 3:1 involvement, in present research majority of the participants were boys. A case study suggested that administration of IGIV in first 3 years of life can reduce the severity of symptoms among hyperactive children, current finding are in correlation with the previous evidence [18]. Ernst M. et al. conducted a descriptive cross sectional study to evaluate maternal risk factors responsible for causing ADHD in newly born child, he found that mothers affected with cytomegalo /rubella virus syndrome gave birth to hyperactive, impatient and attention deficit children [11], in current study majority of the hyperactive with autistic children had cytomegalovirus or rubella virus infection

during pregnancy. Previous findings suggest that teratogen exposure such as thalidomide administration can cause ADHD, current evidence is being supported by the previous research findings as the third most potent pre-natal cause observed in our study was teratogen exposure. According to previous clinical survey's on ADHD with age advancement of mother risk of ADHD in children increases, as per the recent study increased age of mother was the second most common pre-natal cause of hyperactive disorders [16-17]. Agarwal V et al. studied the effect of immunotherapy in treatment of ADHD and concluded that adequate administration of open labelled IGIV can

CONCLUSION

ADHD is a complex neurological and behavior disorder characterized by hyperactivity, eagerness and impulsiveness causing poor communication skills, speech impairment and social issues in children that lasts forever. ADHD is reported due to genetic and non-genetic causes that can't be treated completely but with acquisition of cognition, psychological, physical and immunotherapy severity of the symptoms can be reduced making an individual capable of performing his/her ADLs and IADLs with ease and comfort. In western countries modern research advancements have introduced latest treatment methods for curing these disorders, in our community they are yet to be practiced. It is foremost duty of the medical practitioners to brief women of our community regarding risk factors leading to ADHD and to introduce usage of immunotherapy and psychotherapy in our society.

stop worsening of symptoms in hyperactive children [3], in the recent research improvement was seen in terms of reduction of symptoms upon acquisition of IGIV. As per previous evidences, Psychotherapy and administration of anxiolytics reduce the symptoms, current findings correlate with previous evidence. It is therefore suggested that government should formulate public health policies mainly focusing on public awareness programs regarding clinical manifestations and proper management of hyperactive disorders in children. Abovementioned findings suggest that the present study is strongly supported by previous evidences.

Acknowledgement: We are grateful to all the participating parents and hyperactive children.

Conflict of Interest: None.

Source of Funding: None

REFERENCES

1. Berlin HA, Rolls ET (2004) Time perception, impulsivity, emotionality, and personality in self-harming borderline personality disorder patients. *J Personal Disord* 18:358–378
2. Biederman J, Faraone SV (2005) Attention-deficit hyperactivity disorder. *Lancet* 366:237–248
3. Agarwal V, Sitholey P, Kumar S, Prasad M (2001) Double-blind,

- placebo-controlled trial of clonidine in hyperactive children with mental retardation. *Ment Retard* 39:259–267
4. Biederman J (2004) Impact of comorbidity in adults with attention-deficit/hyperactivity disorder. *J Clin Psychiatry* 65 (Suppl 3):3–7
 5. Barnow S, Ruge J, Spitzer C, Freyberger HJ (2005) Temperament and character in persons with borderline personality disorder. *Nervenarzt* 76:839–848
 6. Bush G, Valera EM, Seidman LJ (2002) Functional neuroimaging of attention-deficit/hyperactivity disorder: a review and suggested future directions. *Biol Psychiatry* 57:1273–1284
 7. Dowson J, Bazanis E, Rogers R, Prevost A, Taylor P, Meux C, Staley C, Nevison-Andrews D, Taylor C, Robbins T, Sahakian B (2004) Impulsivity in patients with borderline personality disorder. *Compr Psychiatry* 45:29–36
 8. Ceumern-Lindenstjerna IA, Brunner R, Parzer P, Fiedler P, Resch F (2002) Borderline personality disorder and attentional biases, Theoretical models and empirical findings. *Fortschr Neurol Psychiatr* 70:321–330
 9. Ebert D, Berger M, Hesslinger B (2002) ADHD as a risk factor for delinquency and personality disorders? Recognizing the patient at risk. *MMW Fortschr Med* 144 (47):31–33
 10. Coccaro EF, Lee R, McCloskey M (2003) Norepinephrine function in personality disorder: Plasma free MHPG correlates inversely with life history of aggression. *CNS Spectr* 8:731–736
 11. Ernst M, Kimes AS, London ED et al. (2003) Neural substrates of decision making in adults with attention deficit hyperactivity disorder. *Am J Psychiatry* 160:1061–1070
 12. Fossati A, Donati D, Donini M, Novella L, Bagnato M, Maffei C (2001) Temperament, character, and attachment patterns in borderline personality disorder. *J Personal Disord* 15:390–402
 13. Friedel RO (2004) Dopamine dysfunction in borderline personality disorder: a hypothesis. *Neuropsychopharmacology* 29: 1029–1039
 14. Faraone SV, Biederman J, Spencer T, Wilens T, Seidman LJ, Mick E, Doyle AE (2000) Attention-deficit/hyperactivity disorder in adults: an overview. *Biol Psychiatry* 48:9–20
 15. Fossati A, Novella L, Donati D, Donini M, Maffei C (2002) History of childhood attention deficit/hyperactivity disorder symptoms and borderline personality disorder: a controlled study. *Compr Psychiatry* 43:369–377
 16. Hesslinger B, Thiel T, Tebartz van Elst L, Hennig J, Ebert D (2001) Attention-deficit disorder in adults with or without hyperactivity: Where is the difference? A study in humans using short echo (1)H-magnetic

- resonance spectroscopy. *Neurosci Lett* 304: 117–119
17. Hesslinger B, Tebartz van Elst L, Thiel T, Haegele K, Hennig J, Ebert D (2002) Frontoorbital volume reductions in adult patients with attention deficit hyperactivity disorder. *Neurosci Lett* 328: 319–321
18. Hunt RD, Minderaa RB, Cohen DJ (1986) The therapeutic effect of clonidine in attention deficit disorder with hyperactivity: a comparison with placebo and methylphenidate. *Psychopharmacol Bull* 22:229–236
19. Hesslinger B, Tebartz van Elst L, Nyberg E, Dykieriek P, Richter H, Berner M, Ebert D (2002) Psychotherapy of attention deficit hyperactivity disorder in adults – a pilot study using a structured skills training program. *Eur Arch Psychiatry Clin Neurosci* 252: 177–184
20. Hesslinger B, Philipsen A, Richter H (2004) Psychotherapy in adult ADHD. Hogrefe, Göttingen

Management of Maniac/bipolar Depression.

Ishaq Khan¹, Iqra Naseem²

1. Professor, Department of Neurosciences, University of Weldon, USA
2. Assistant Professor, Rehabilitation Department, Yusra Medical and Dental College

ABSTRACT

Objectives: To evaluate effectiveness of adequate counselling, sympathy, humble attitude and due attention of medical practitioner in management of maniac depression.

Methodology: A descriptive case study was conducted at Mediks international Hospital and Research center from July 2016 to September 2017. Initially purposive sampling was done through designated questionnaires and scales. 400 participants reporting with psychological issues were screened, 200 out of 400 participants had positive score for depression. A total of 200 patients diagnosed with depression fulfilling inclusion criterion, aged between 20-60 years were enrolled in the study after signing informed consent. DASS-D was used to assess reduction in depression after periods of adequate counselling and a specially designed questionnaire was used to assess improvement in mood swings and quality of life in participants. Data was analyzed using statistical package for social sciences (SPSS) version 25. Chi-square test was applied at 5% level of significance and p-value of less than 0.05 was considered to be significant.

Results: 200 participants aged between 20 to 60 years with mean age of 30.11 were enrolled in the study, out of them, 32.5% were males and 67.5% were females. 52.5% participants had unipolar and 47.5% had bipolar depression. Pre and post counselling M in unipolar D was 24.5 and 16.2 whereas Pre and post counselling M in bipolar D was 21.5 and 14.3 respectively. Among 200 participants (N=145) considered Counselling sessions, (N=25) believed humble attitude and empathy of Doctor and (N=30) considered due attention and concern of doctor to be highly effective in reducing depression. In addition to this (N=27) reported reduced mood swings, (N=30) increased appetite, (N=43) improved sleep cycle, (N=15) reduced periods of Mania, (N=22) reduced anger/rage, (N=18) reduced gloominess, (N=10) increased social interactions, (N=7) weight gain and (N=28) reduced suicidal thoughts.

Conclusion: Adequate counselling, sympathy, kind and concerning behavior of a medical practitioner can be massively helpful in reducing Maniac/bipolar depression and in developing effective coping strategies in patients with this particular type of depression.

Key words: Counselling, Empathy, Unipolar depression, Maniac Depression, Sympathy

INTRODUCTION

Human health is an amalgam of a healthy soul, mind and body (1). Physical health of an individual is based on adequate functioning of the anatomical structures and physiological systems (1, 2). Psychological health comprises of following components i.e. mood swings, self-contentment, self-satisfaction, anxious behaviors, aggressive attitudes, emotional reactivity and depressive disorders. A dire balance between physical and psychological health is required for a contented and successful life (3, 4). Unfortunately very little attention is being paid to well-being of psychological health of an individual. In last few decades ration of suicidal attempts has been massively increased in USA due to misdiagnosed cases of depression that ultimately ends into acts of self-harms (5). Previous researches and evidence states that the sole root cause behind these horrible acts is immensely increasing depression among women and young individuals (6,7). Variable factors responsible for development of depressive disorders such as lack of attention, self-deprivation, loss of loved one (8), emotional abuse, traumatic losses and multiple failures, apart from this natural disasters (9), post-partum periods, handicapped life and social isolation in geriatric population also promotes depression (10). Depression is further divided into unipolar and bipolar disorder, As per Statistical Manual of Mental Disorders unipolar depression comprises of only depression whereas bipolar depression characterized by

depression and mania (12, 13). Unipolar means that symptoms revolve around one pole only where individual stays gloomy and depicts introvert behavior followed by prolonged periods of sleep deprivation, social isolation and self-neglect (14, 15). In contrast to it bipolar depression has two phases where period of depression and gloominess is followed by phases of excessive euphoria, happiness, impulsivity, restlessness, agitation and aggressive responses (16, 17). Bipolar disorders have genetic and environmental causes such as peak stress or trauma. Both of these depressions are characterized by feelings of agitation, anxiousness and helplessness (18, 19), along with loss of interests in pleasurable acts, low energy and least botheration about responsibilities and work. The major difference between these two types is that in unipolar disorder patients have poor appetite, reduced sleep duration and tremendous weight loss whereas in bipolar cases patients experience elevated appetite, weight gain and increased sleep cycle duration (20, 21). Bipolar disorders have high ratio of suicidal attempts as it is a mixture of multiple factors i.e. mania, depression, anxiety and psychosis (24). Treatment options vary in both cases, Anti-psychotic and anti-depressant drugs are commonly used in both of the disorders but effective counselling is another strong domain of the treatment regime (22, 23). Bipolar disorders are treated with psychotherapy and mood stabilizers capable of reducing frequency of manic attacks (25). The sole purpose of these drugs is to reduce depressive symptoms without causing an

attack of mania. The purpose of this article is to highlight the effectiveness of counselling in reducing symptoms of manic depression and mania and to develop awareness regarding beneficial effects of psychotherapy in our community.

PATIENTS AND METHODS

A descriptive case study was conducted at Mediks international Hospital and Research center from July 2016 to September 2017. Initially purposive sampling was done through designated questionnaires and scales. 400 participants reporting with psychological issues were screened, 200 out of 400 participants had positive score for depression. A total of 200 patients diagnosed with depression fulfilling inclusion criterion (no associated comorbidity, no previous surgical history

and no congenital anomaly), aged between 20-60 years were enrolled in the study after signing informed consent. DASS-D was used to assess reduction in depression after periods of adequate counselling and a specially designed questionnaire was used to assess improvement in mood swings and quality of life in participants. Data was analyzed using statistical package for social sciences (SPSS) version 25. Chi-square test was applied at 5% level of significance and p-value of less than 0.05 was considered to be significant. Continuous variables had mean and Standard deviation calculated whereas frequency/percentage was calculated for categorical variables

RESULTS

Figure 1: Bar chart showing frequency of Participants age

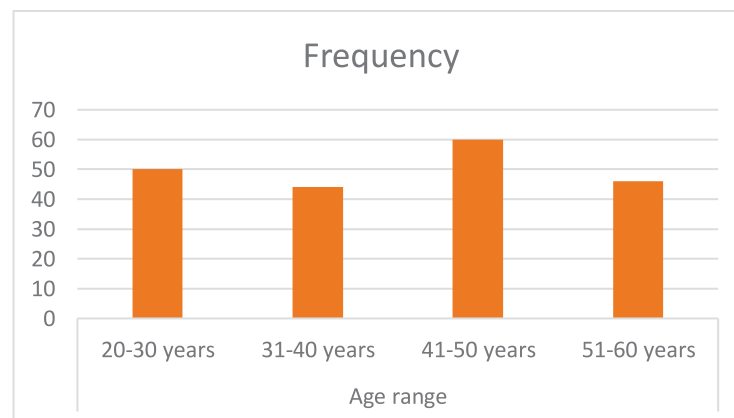


Figure 1 shows that all the participants were divided into four equal categories of age percentiles ranging from 20 to 60 years. In case group 20-30 years subjects were (N=50, 25%), 31-40 years were (N=44, 22%), 41-50 years were (N=60, 30%) and 51-60 years subjects were (N=46, 23%).

Figure 2: Bar chart showing frequency of Participants gender

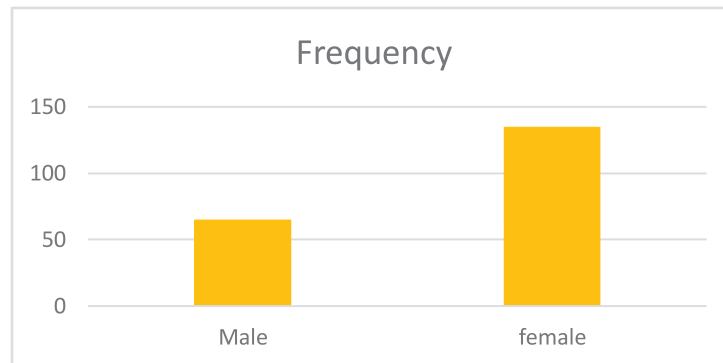


Figure 2 shows that (N=65, 32.5%) were male participants and (N=135, 67.5%) were females.

Figure 3: Bar chart showing frequency of types of Depression in (N=200)

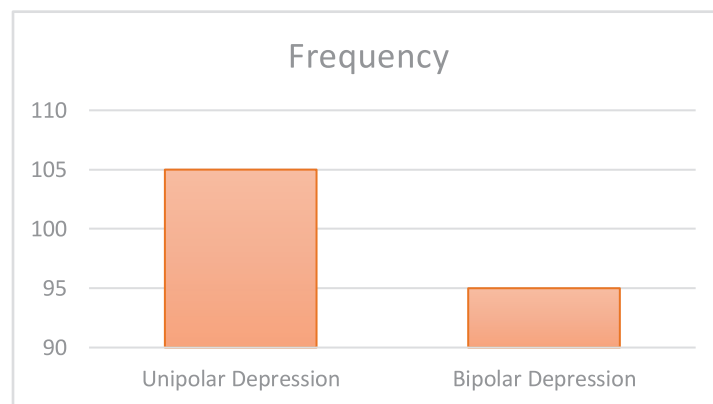


Figure 2 shows that (N=105, 52.5%) participants had unipolar depression (N=95, 47.5%) had Maniac/bipolar depression.

Figure 3: Bar chart showing Mean Difference in Depression score at DASS-D before and after counselling sessions in (N=200) Participants

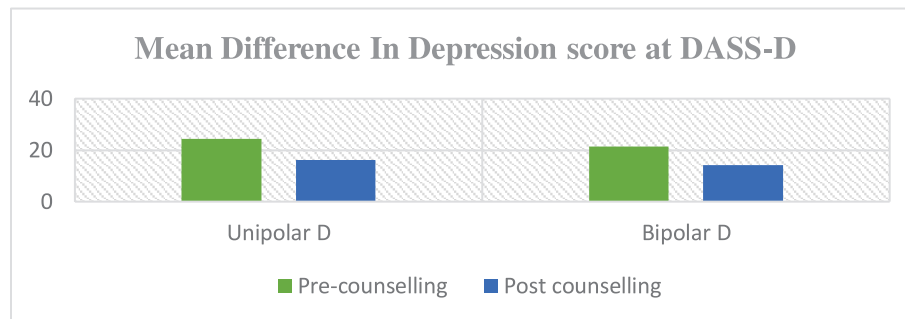


Figure 3 shows Mean values of pre and post counselling depression scores as per observed in DASS-D. Pre and post counselling M in unipolar D was 24.5 and 16.2 whereas Pre and post counselling M in bipolar D was 21.5 and 14.3 respectively.

Table 1: frequency table showing effectiveness of counselling and due attention of medical practitioner upon participants in reducing depression.

Variable	N=200	Reduction in depression (Yes/NO)	P-value
Counselling sessions	145	Yes	0.000
Humble attitude and empathy of Doctor	25	Yes	0.001
Due Attention and Concern of Doctor	30	Yes	0.002

Table 1 shows out of total 200 participants (N=145) considered Counselling sessions, (N=25) believed humble attitude and empathy of Doctor and (N=30) considered due attention and concern of doctor to be highly effective in reducing depression. P-value less than 0.05 suggests that observed findings are significant.

Table 2: frequency table showing reduction in symptoms associated with Depression in N=200

Variable	N=200	P-value
Reduced Mood swings	27	0.000
Increased Appetite	30	0.001
Improved sleep cycle	43	0.002
Reduced periods of Mania	15	0.003
Reduced anger/rage	22	0.001

Reduced gloominess	18	0.000
Increased social interactions	10	0.004
Weight gain	7	0.001
Reduced suicidal thoughts	28	0.002

Table 2 shows that out of total 200 participants, (N=27) reported reduced mood swings, (N=30) increased appetite, (N=43) improved sleep cycle, (N=15) reduced periods of Mania, (N=22) reduced anger/rage, (N=18) reduced gloominess, (N=10) increased social interactions, (N=7) weight gain and (N=28) reduced suicidal thoughts. P-value less than 0.05 suggests that observed findings are significant.

DISCUSSION

Depression isn't a disorder it's a syndrome that badly affects every perspective and aspect of one's life (1). It's not about being gloomy and feeling detachment from the world, it's all about losing contact with soul and mind along with living in a miserable and helpless conditions. Previous evidence states that factors responsible for development of depression are mainly lack of attention, self-deprivation, loss of loved one, emotional abuse, traumatic losses and multiple failures, apart from this natural disasters, post-partum periods, handicapped life and social isolation in geriatric population also promotes depression (2, 3). Previous researches reported that ratio of depression among young professionals is increasing day by day due to excessive work load and professional competition (4, 5), in our study 25% of the participants who reportedly had depression were between 20 to 30 years of age. A clinical survey conducted in USA concluded that propensity of depression is way more in women as compared to males (11), in current research 67.5% participants were females and 32.5%

were males showing major predominance of female gender. Mumford DB concluded that depression further categorized into unipolar and bipolar types. In present study 52.5% participants had unipolar 47.5% had bipolar depression. In majority of the previous researches DASS-D was used to assess the intensity of depression in participants, in present research DASS-D was used to assess reduction in severity of depression after adequate counselling sessions. Elaine W concluded that provision of counselling sessions to depressive patients reduce severity of the disorder and sometimes it completely eradicates depression from its roots (6). In present research study, (N=145) participants reported counselling sessions and (N=25) reported that humble attitude and empathy of doctor reduced intensity of depression. Paykel ES et al. concluded that adequate counselling sessions improved sleep cycle, increased appetite and reduced suicidal thoughts in majority of the patients suffering from depression (10), in our study out of total 200 participants (N=30) reported increased appetite, (N=43) improved sleep

cycle, and (N=28) reduced suicidal thoughts. All abovementioned facts show that current

CONCLUSION

Adequate counselling, sympathy, kind and concerning behavior of a medical practitioner can be massively helpful in reducing depression and in developing effective coping strategies in patients with all grades and types of depression. It is solely at the end of medical practitioners to create due awareness regarding beneficial effects of counselling among people so that they can maintain a dire balance between

study is strongly supported by previous research evidences.

their professional and personal life. Further researches must be conducted on this subject involving larger part of community.

Acknowledgement: We are grateful to all of our participants.

Conflict of Interest: None.

Source of Funding: None

REFERENCES

1. Dennis McCallum; Lay counseling, <http://www.xenos.org/ministries/counsel/counsel.html>
2. Hassan KZ (2001). Practice of psychiatry in the developing countries in the new millennium. *Journal of College of Physicians and Surgeons Pakistan*, 11, 206-07.
3. Mumford DB, Minhas FA, Akhtar I et al. (2000). Stress and psychiatric disorder in urban Rawalpindi: Community survey. *British Journal of Psychiatry*, 177, 551-62.
4. Patel V, Todd CH, Winston M, et al. (1998). The outcome of common mental disorders in Harare, Zimbabwe. *British Journal of Psychiatry*, 172, 53-51.
5. Goldberg D, Bridges K, Cook D, et al. (1990). The influence of social factors on common mental disorders: Destabilization and restitution. *British Journal of Psychiatry*, 156, 704-13
6. Elaine W, Michael K, Margaret L, Peter B (2000). Randomised controlled trial of non-directive counseling, cognitive-behavior therapy, and usual general practitioner care for patients with depression I: Clinical effectiveness. *British Medical Journal*, 321, 1383-88.
7. Al I BS (1998). Validation of an indigenous screening questionnaire for anxiety and depression in an urban squatter settlement of Karachi. *Journal of College of Physicians and Surgeons Pakistan*, 8, 207- 11.
8. Goldberg D (1985). Identifying psychiatric illness in general medical patients. *British Medical Journal*, 291,161-62.
9. Rabbani F (1999). Views about women's mental health: Study in a

- squatter settlement of Karachi. Journal of Pakistan Medical Association, 49, 139-142.
10. Paykel ES, Hurt D, Priest RG (1998). Changes in public attitudes to depression during the defeat depression campaign. The British Journal of Psychiatry, 173, 519-22.
 11. Anne D W (2001). Psychologic therapies vs. physician care for depression. American Family Physician. 64, 1, 311.
 12. Karl E M (1999). Behavior therapy vs. medication for depression. American Family Physician. 60, 2640.
 13. Al I BS, Raza H, Khan MM, Jehan I (1998). Development of an indigenous screening instrument in Pakistan: The Aga Khan University Anxiety and Depression Scale. Journal of Pakistan Medical Association, 48, 261-65.
 14. Priest RG, Vize C, Roberts A, Tylee A (1996). Lay people's attitudes to treatment of depression. British Medical Journal, 313, 838-59
 15. Harris T, Brown GW, Robinson R (1999). Befriending as an intervention for chronic depression among women in an inner city. I: Randomized controlled trial. British Journal of Psychiatry, 174, 219-24.
 16. Mynors-Wallis L M, Davis I , et al. (1997). Randomized controlled trial and cost analysis of problem-solving treatment for emotional disorders by community nurses in primary care. British Journal of Psychiatry, 170, 113 -19.
 17. Murray CJL, Lopez AD, Eds. (1996). The global burden of disease. Comprehensive assessment of mortality and disability from diseases, injuries and risk factors in 1990 and projected to 2020. Cambridge, MA: Harvard School of Public Health for World Health Organization and the World Bank.
 18. Desjarlais R, Eisenberg L, Good B, Kleinman A (1995). World mental health— problems and priorities in low-income countries. New York: Oxford University Press.
 19. Saraceno B (2001). A landmark year for world mental health. Journal of College of Physicians and Surgeons Pakistan, 11, 190-191.
 20. Alem A (1997). Mental health in rural Ethiopia. Addis Ababa: Umea University Press
 21. Holden C (2000). Global survey examines impact of depression. Science, 288, 39-40.
 22. Goldberg D (1985). Identifying psychiatric illness in general medical patients. British Medical Journal, 291, 161-62.
 23. Blue I, Harpham T (1996). Urbanization and mental health in developing countries: Current issues. Public Health, 2, 181-5.
 24. World Health Report (1999). Director Generals Report. A corporate strategy for World Health Organization. Geneva, Switzerland: World Health Organization. World Development Report (1993). Investing in health. Oxford, England: Oxford University Pr

Pathogenesis and Management of schizophrenia

Ishaq Khan¹, Iqra Naseem², Junaid.I.Khan³

1. Professor, Department of Neurosciences, University of Weldon, USA
2. Assistant Professor, Rehabilitation Department, Yusra Medical and Dental College
3. Mediks International Hospital, Nowshehra

ABSTRACT

Objectives: To investigate pathogenesis and effectiveness of Psychotherapy along with administration of SSRI'S and anti-psychotics in schizophrenic patients

Methodology: A descriptive case study was conducted at Mediks international Hospital and Research center from July 2016 to September 2017. Initially purposive sampling was done through using DSM-5 criteria. A total of 200 patients diagnosed with schizophrenia fulfilling inclusion criterion, aged between 20-60 years were enrolled in the study after signing informed consent. SCA-HQ was used to assess reduction in symptoms, alcohol abuse, violent activities and improvement in quality of life after adequate sessions of psychotherapy and administration of specially designed regime of anti-psychotics and SSRI'S to patients for a period of 1 year. Data was analyzed using statistical package for social sciences (SPSS) version 25. Chi-square test was applied at 5% level of significance and p-value of less than 0.05 was considered to be significant.

Results: 200 participants aged between 20 to 60 years with mean age of 30.11 were enrolled in the study, out of them, 32.5% were males and 67.5% were females. Among 200 participants (N=145) considered Administration of anti-psychotic drugs and SSRI'S, (N=30) believed humble attitude and empathy of Doctor and (N=25) considered one session of psychotherapy and cognitive therapy/week to be highly effective in reducing symptoms of schizophrenia. Immunohistochemistry analysis of brain tissues showed Dopaminergic Gabanergic receptors dysfunction in N=20, 10%, Inflammatory Changes in N=15, 7.5%, NMDA receptor hypofunction in N=40, 20%, Increased Dopamine releases and glutamate reuptake (Imbalance of neurotransmitters) in N=50, 25% and Oxidative stress in N=10, 5%. In addition to this among 200 participants (N=27) reported reduced mood swings, (N=30) increased appetite, (N=43) improved sleep cycle, (N=15) reduced periods of Mania, (N=22) reduced anger/rage, (N=18) reduced gloominess, (N=10) increased social interactions, (N=7) weight gain and (N=28) reduced suicidal thoughts

Conclusion: Schizophrenic patients respond well to sessions of psychotherapy and administration of SSRI'S and anxiolytics. It results due to imbalance of neurotransmitters occurring from multiple prenatal maternal and psychosocial causes. It is foremost duty of health care professional to develop awareness regrading well-being of mental health in the society and how it can affect one's life.

Key words: Schizophrenia, SSRI's, Psychotherapy, NMDA receptor Hypofunctio

INTRODUCTION

Schizophrenia is a lethal and deteriorating mental disorder that badly influences and individual's ability to perceive real image of surrounding, as a result, abnormal perception of reality is commonly reported¹. It is characterized by frequent episodes of hallucinations, delusions, disturbed behavior, psychotic reactions and disordered thinking capable of impairing daily activities and promotes disability². Schizophrenia effects mainly cognition, emotions and behavior followed by abnormal perception and disorganized speech. In addition to behavioral manifestations motor activities are also effected leading to development of abnormal postures, jerky movements and excessive excitatory responses³. Schizophrenia mainly results from genetic social, psychological and environmental factors, Genetic factors responsible for this

disorder are mainly neuronal migration and connectivity leading towards NMDA complex, Dopaminergic Gabanergic receptors dysfunction that will eventually increase dopamine release and reduce glutamate reuptake capacity⁴⁻⁵. NMDA receptor hypofunction decreases inhibitory effect upon gabanergic neuron followed by overstimulation of dopaminergic neurons resulting in excitotoxicity²¹ and excessive glutamate release⁶. In addition to inflammatory cascade is characterized by following sequence of events i.e. activation of inflammatory cytokines²⁰, glutathione imbalance, microglial activation, releases of reactive oxygen and nitrogen species and increased glutamate neurotransmission⁷. These sequence of events alters brain chemistry promoting brain dysfunction and imbalance of neurotransmitters. (Fig-1)

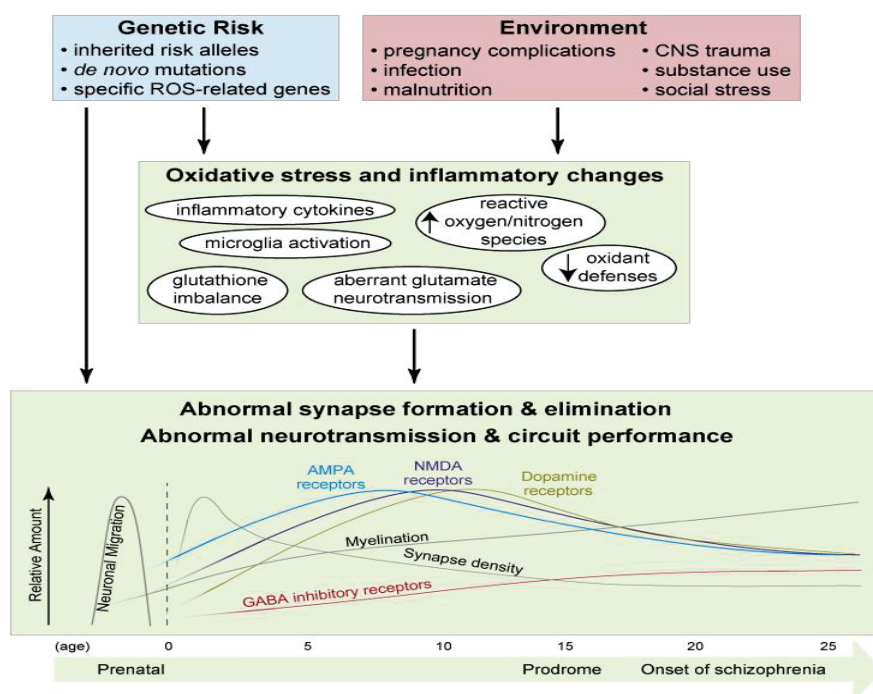


Figure 1 shows Pathogenesis of Schizophrenia

In General 5 Basic types of schizophrenia have been identified so far i.e. Paranoid, Hebephrenic, catatonic, residual and simple⁸. Commonly observed symptoms are Depression, social withdrawal, flat, expressionless gaze, inability to express emotions⁹, insomnia, loss of working memory, irritable and aggressive behavior,

deteriorating personal hygiene and loss of interest in family and friends. Schizophrenia isn't completely curable but prompt administration of anti-psychotics, SSRI's, sedatives¹⁰ and anxiolytics can reduce severity of the symptoms. This article highlights pathogenesis and effective management of schizophrenic patients.

PATIENTS AND METHODS

A descriptive case study was conducted at Mediks international Hospital and Research center from July 2016 to September 2017. Initially purposive sampling was done through using DSM-5 criteria. A total of 200 patients diagnosed with schizophrenia fulfilling inclusion criterion i.e. (no brain anomaly, co-operative attitude and no associated co-morbidity) aged between 20-60 years were enrolled in the study after signing informed consent. SCA-HQ i.e. (schizophrenia care and assessment healthcare program questionnaire) comprising of four domains particularly health status, functional status, quality of life and public safety, was used to assess reduction in psychotic symptoms, alcohol abuse, violent activities and improvement in

quality of life and satisfaction. All the enrolled patients went through MRI investigations, immunohistochemistry brain findings for evaluating basic pathogenic feature responsible for causing schizophrenia. In addition to this all participants were administered with one psychotherapy, physical therapy and occupational therapy session per week for a course on one year along with administration of specially designed regime of anti-psychotics and SSRI'S. Data was analyzed using statistical package for social sciences (SPSS) version 25. Chi-square test was applied at 5% level of significance and p-value of less than 0.05 was considered to be significant

RESULTS

Figure 1: Bar chart showing frequency of Participants age

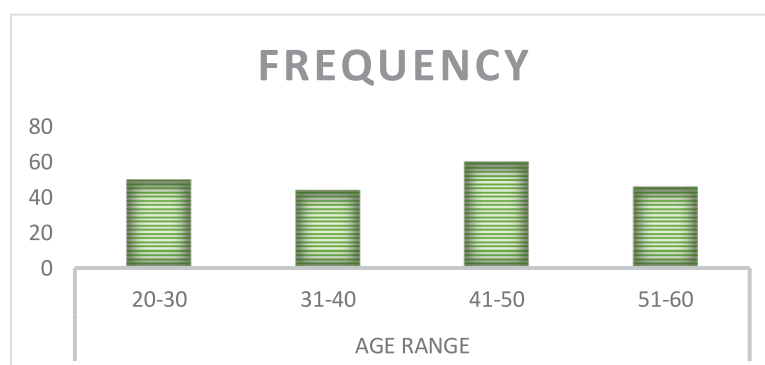


Figure 2: Bar chart showing frequency of Participants gender

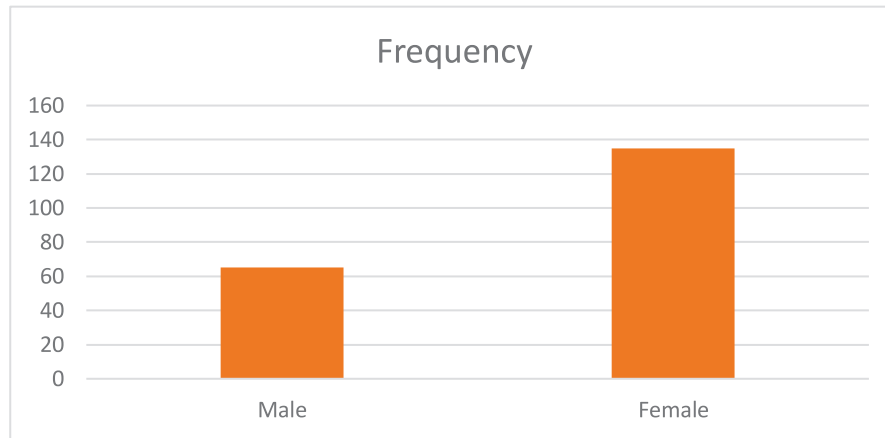


Figure 2 shows that (N=65, 32.5%) were male participants and (N=135, 67.5%) were females

Table 1: frequency table showing effectiveness of Psychotherapy, cognitive therapy, anti-psychotic drugs and SSRI'S in reducing symptoms of Schizophrenia

Variable	N=200	Reduction in symptoms of schizophrenia (Yes/NO)	P-value
Administration of anti-psychotic drugs and SSRI'S	145	Yes	0.000
One session of psychotherapy and cognitive therapy/week	25	Yes	0.001
Humble attitude and empathy of Doctor	30	Yes	0.002

Table 1 shows out of total 200 participants (N=145) considered Administration of anti-psychotic drugs and SSRI'S, (N=30) believed humble attitude and empathy of Doctor and (N=25) considered one session

of psychotherapy and cognitive therapy/week to be highly effective in reducing symptoms of schizophrenia. P-value less than 0.05 suggests that observed findings are significant.

Table 2: frequency table showing reduction in symptoms associated with Schizophrenia after administration of SSRI'S and anti-psychotic drugs in N=200 participants

Variable	N=200	P-value
Reduced Mood swings	27	0.000
Increased Appetite	30	0.001
Improved sleep cycle	43	0.002
Reduced periods of Mania	15	0.003
Reduced anger/rage	22	0.001
Reduced gloominess	18	0.000
Increased social interactions	10	0.004
Weight gain	7	0.001
Reduced suicidal thoughts	28	0.002

Table 2 shows that out of total 200 participants, (N=27) reported reduced mood swings, (N=30) increased appetite, (N=43) improved sleep cycle, (N=15) reduced periods of Mania, (N=22) reduced

anger/rage, (N=18) reduced gloominess, (N=10) increased social interactions, (N=7) weight gain and (N=28) reduced suicidal thoughts. P-value less than 0.05 suggests that observed findings are significant.

Table 3: Interpretation of Immunohistochemistry analysis of brain tissue of 200 cases

Variable	Frequency/percentage	P-value
Dopaminergic Gabanergic receptors dysfunction	N=20, 10%	0.002
Inflammatory Changes	N=15, 7.5%	0.004
NMDA receptor hypofunction	N=40, 20%	0.000
Increased Dopamine releases and glutamate reuptake (Imbalance of neurotransmitters)	N=50, 25%	0.000
Oxidative stress	N=10, 5%	0.003

Table 3: shows immunohistochemistry analysis of brain tissues of 200 Schizophrenic cases, as per the findings Five

basic changes were reported, Dopaminergic Gabanergic receptors dysfunction in N=20, 10%, Inflammatory Changes in N=15, 7.5%,

NMDA receptor hypofunction in N=40, 20%, Increased Dopamine releases and glutamate reuptake (Imbalance of neurotransmitters) in N=50, 25% and Oxidative stress in N=10, 5%.

Table 4: Frequency table showing non-genetic causes of Schizophrenia

Variables	Frequency/percentage	P-value
Pre-natal causes		
Maternal Infection	N=75, 37.5%	0.000
Obesity/ Diabetes	N=15, 7.5%	0.001
Age above 35	N=40, 20%	0.000
Teratogen & Pesticide exposure	N=20, 10%	0.002
Alcohol abuse	N=5, 2.5%	0.003
In Adults		
Stress	N=100, 50%	0.000
Socioeconomic Pressure	N=75, 25%	0.004
Viral infection	N=20, 10%	0.001

Table 4 shows frequency of pre-natal maternal causes of schizophrenia, out of total 200 participants, (N=75, 37.5%) mothers had Maternal infection, (N=15, 7.5%) were obese and diabetic, (N=40, 20%) were above 35 years of age, (N=20, 10%) gave history of teratogen and pesticide exposure, (N=5, 2.5%) reported alcohol

abuse. As per the findings in adults commonly observed cause was stress affecting (N=100, 50%), Socioeconomic Pressure in (N= 75, 25%) and Viral infection in (N=20, 10%) participants. P-value less than 0.05 suggests that all the findings are significant.

DISCUSSION

Schizophrenia is a mental health and psychological disorder that disturb an individual's actual perception about surrounding environment and is characterized by frequent episodes of hallucinations¹¹, delusions and emotional breakdowns¹². A schizophrenic individual experiences neurological and motor deficits as well due to imbalance of neurotransmitters mainly Dopamine and Glutamate¹³⁻¹⁴. It results from overtly disturbing psychosocial stress or due to maternal causes as in maternal diabetes, obesity, alcohol abuse, infections and advanced age¹⁷. Schizophrenic individuals are excessively paranoid, agitated and are

CONCLUSION

Schizophrenia is a mental health disorder that responds well to sessions of psychotherapy and administration of SSRI'S and anxiolytics. It results due to imbalance

Acknowledgement: We are grateful to all the participating Schizophrenic Patients.

Conflict of Interest: None.

quite aggressive in specific circumstances. In Present study impact of anxiolytics and SSRI's was found really effective in weaning off symptoms like anger²² issues¹⁵, crying spells¹⁶, suicidal thoughts, hallucinations¹⁷⁻¹⁸ and maniac spells¹⁹⁻²⁰. Mental Health disorders need due attention of health policy makers and public health specialists for developing properly organized forums that can conduct awareness seminars and help people in understanding of the complexity of the situation. Mental disorders aren't any stigma and they can be treated like other physiological complications if they are timely diagnosed and prompt measures are taken at the very moment.

of neurotransmitters occurring from multiple prenatal maternal and psychosocial causes. It is foremost duty of health care professional to develop awareness regarding well-being of mental health in the society and how it can affect one's life

Source of Funding: None

REFERENCES

1. Barrowclough, C., Tarrier, N., Watts, S., Vaughn, C., Bamrah, J. S. & Freeman, H. (1987) Assessing the functional value of relatives' knowledge about schizophrenia: a preliminary report. *British Journal of Psychiatry*, 151, 1–8. CrossRef | Google Scholar | PubMed
2. Brown, G. W., Monck, E. M., Carstairs, G. M. & Wing, J. K. (1962) Influence of family life on the course of schizophrenia. *British Journal of Preventative and Social Medicine*, 16, 55–68. Google Scholar
3. Birchwood, M. (1983) Family coping behaviour and the course of schizophrenia: a two-year follow-up study. PhD Thesis, University of Birmingham. Google Scholar
4. Barrowclough, C. & Tarrier, N. (1984) Psychosocial interventions with families and their effects on the course of schizophrenia: a review. *Psychological Medicine*, 14, 629–

- 642.CrossRef | Google Scholar | PubMed
5. Davis, J. M. (1975) Overview: maintenance therapy in psychiatry: I. Schizophrenia. *American Journal of Psychiatry*, 13, 1237–1254. Google Scholar
 6. Bruner, J. S. (1966) *Towards a Theory of Instruction*. New York: Norton. Google Scholar
 7. Baldwin, S. (1987) From communities to neighbourhoods – 1. *Disability, Handicap and Society*, 2, 41–52. CrossRef | Google Scholar
 8. Dultz, B. & Hand, I. (1986) Short-term relapse in young schizophrenics: can it be predicted and affected by family (CFI), patient, and treatment variables? An experimental study In *Treatment of Schizophrenia: Family Assessment and Intervention* (eds Goldstein, M. J., Hand, I. & Hahlweg, K.). Berlin: Springer. Google Scholar
 9. Goldberg, D. (1972) *The Detection of Psychiatric Illness by Questionnaire*, Maudsley Monographs No 21. London: Oxford University Press. Google Scholar | PubMed
 10. Falloon, I. R. H., Boyd, J. L., McGill, C. W., Razani, J., Moss, H. B. & Gilderman, A. M. (1982) Family management in the prevention of exacerbations of schizophrenia. *New England Journal of Medicine*, 306, 1437–1440. CrossRef | Google Scholar | PubMed
 11. Goldiamond, I. (1974) Towards a constructional approach to social problems. Ethical and constitutional issues raised by applied behaviour analysis. *Behaviourism*, 2, 1–84. Google Scholar
 12. Falloon, I. R. H., Boyd, J. L., McGill, C. W., Williamson, M., Razani, J., Moss, H. B., Gilderman, A. M. & Simpson, G. M. (1985) Family management in the prevention of morbidity of schizophrenia: clinical outcome of a two year longitudinal study. *Archives of General Psychiatry*, 42, 887–896. CrossRef | Google Scholar | PubMed
 13. Hogarty, G. E., Anderson, C. M., Reiss, D. J., Kornblith, S. J., Greenwald, P., Javan, C. D., Manonia, M. J. and the EPICS Research Group (1986) Family psychoeducation, social skills training, and maintenance chemotherapy in the aftercare treatment of schizophrenia. *Archives of General Psychiatry*, 43, 633–642. CrossRef | Google Scholar | PubMed
 14. Koenigsberg, H. & Handley, R. (1986) Expressed emotion: from predictive index to clinical construct. *American Journal of Psychiatry*, 43, 1361–1373. Google Scholar
 15. Krawieka, M., Goldberg, D. & Vaughan, M. (1977) A standardised psychiatric assessment scale for rating chronic psychotic patients. *Acta Psychiatrica Scandinavica*, 55, 299–308. CrossRef | Google Scholar
 16. Kellner, R. & Sheffield, B. F. (1973) A self-rating scale of distress. *Psychological Medicine*, 3, 101–106. CrossRef | Google Scholar | PubMed
 17. Kottgen, C., Sonnichsen, I., Mollenhauer, K. & Jurth, R. (1984) Group therapy with families of schizophrenic patients: results of the Hamburg Camberwell Family Interview Study III. *International*

- Journal of Family Psychiatry, 5, 83–94. [Google Scholar](#)
18. Leff, J. (1985) Family treatment of schizophrenia In *Recent Advances in Clinical Psychiatry* (ed. Granville-Grossman, K.). London: Churchill-Livingston. [Google Scholar](#)
 19. MacMillan, J. F., Gold, A., Crow, T. J., Johnson, A. L. & Johnstone, E. C. (1986) The Northwick Park study of first episodes of schizophrenia: IV
 20. Leff, J., Kuipers, L., Berkowitz, R., Eberlein-Vries, R. & Sturgeon, D. (1982) A controlled trial of social intervention in families of schizophrenic patients. *British Journal of Psychiatry*, 141, 121–134. [CrossRef](#) | [Google Scholar](#) | [PubMed](#)
 21. Moline, R. E., Singh, S., Morris, A. & Meltzer, H. Y. (1985) Family expressed emotion and relapse in schizophrenia in 24 urban American patients. *American Journal of Psychiatry*, 142, 1078–1081. [Google Scholar](#) | [PubMed](#)
 22. Strachan, A. M. (1986) Family intervention for the rehabilitation of schizophrenia. *Schizophrenia Bulletin*, 12, 678–698. [CrossRef](#) | [Google Scholar](#) | [PubMed](#)

Preventive and Prophylactic treatment of viral infection

Ishaq Khan¹, Iqra Naseem², Junaid.I.Khan³

1. Professor, Department of Neurosciences, University of Weldon, USA
2. Assistant Professor, Rehabilitation Department, Yusra Medical and Dental College
3. Mediks International Hospital, Nowshehra

ABSTRACT

Objective: To evaluate effectiveness of prophylactic antiviral cover and preventive measures in reducing nosocomial viral infections among patients diagnosed with respiratory disorders.

Methodology: A randomized clinical trial was conducted at medical of holy family hospital Rawalpindi from January 2019 to June 2019. 50 patients aged between 10 to 50 years (diagnosed with moderate respiratory infections and having breathing difficulties) admitted in hospital for a duration of 2-3 weeks fulfilling inclusion criterion were enrolled in the study after signing informed consent. The candidates were allocated in two equal groups i.e. experimental group to which specially designed regime of anti-viral drugs was administered prophylactically along with provision of hygienic environment in separate isolation rooms and control group to which general treatment was administered after diagnosis of the infection and patients were kept in wards. A specially designed questionnaire was used to analyze recovery ratio, infection ratio, reduction in symptoms of respiratory symptoms and improvement in quality of life in both groups. The data was analyzed using statistical package for social sciences (SPSS) version 21. *Independent t-test* was applied to find out differences between control and experimental group. A *p-value* of <0.05 was considered significant.

Results: Independent t test showed overall improvement in experimental group with p-value of 0.001 for Post-treatment respiratory symptoms score and 0.000 for HRQOL score. 90% patients in control group got victim of post-treatment suppurative viral infection whereas only 10% in experimental group caught any nosocomial infection. 85% patients in experimental group showed complete recovery and only 15% in control group.

Conclusion: It is concluded that prophylactic anti-viral cover and adequate precautionary measures in terms of contact with patients and hygiene protocols can not only reduce the chance of acquiring nosocomial infections but can reduce the symptoms of ongoing disease along with improvement in quality of life.

Keywords: Anti-viral cover, Preventive measures, Influenza, Common Cold.

INTRODUCTION

Viral infections have been known for imposing serious threats on patient's life via compromising their immune systems and destroying body's natural defense mechanism (1). In addition to their lethal clinical manifestations viruses are way more contagious than bacteria's due to their prompt mode of transmissions, prolonged life duration, long prodromal periods and small sizes. Viruses are known for pandemic disorders (2). Viral infections have variety of symptoms ranging from minor fever to destruction of all the body systems leading towards multiple organ failure. Commonly reported viral infections over the period of last fifty years are Spanish flu, Influenza, Aids, Hepatitis B&C, HSV1 and HSV2 infections (3-4). Viruses transmit via inhaling cough or sneeze droplets of a positive individual or ingesting contaminated and uncooked food or sometime via drinking contaminated fluids (5). Apart from this some viruses enter human body through insect bites e.g. dengue and some viruses enter via exchange of body fluids i.e. blood and saliva. Viruses can be transmitted via sexual intercourse as well and to individuals who are in closed contact with positive cases (6). Viral infection have been announce as public emergency of

international concern or pandemic due to their rapid spread from one region of the world to the other e.g. Spanish flu (7), ebola virus, swine flu (8) and Covid-19 currently. Respiratory tract infections resulting from viruses have lethal outcomes as these viruses impair respiratory mechanics followed by pleural effusion and severe empyema (9-10). These disorders result in atelectasis of multiple alveoli and increase overall work of breathing as soon as pus accumulated in pleural space begins to consolidate followed by fibrosis of lungs (11). This lethal series of inflammatory actions results in acute respiratory distress syndrome which eventually needs mechanical ventilation in the end. Unfortunately worsened cases do not survive (12-13). Here what can be done is to take excessive precautionary measures assuring minimum spread of the virus along administration of vaccines to individual who are at risk and have maximum chances of catching a viral infection such as patients admitted in hospital with any respiratory pathology (14). Apart from vaccine prophylactic antiviral drugs can also be administered to reduce symptoms. Unfortunately little is known to us regarding preventive measures that could be taken to reduce spread of disease. The purpose of this

article is to highlight benefits of preventive measures and usage of prophylactic antiviral cover in management of viral infections.

PATIENTS AND METHODS

A randomized clinical trial was conducted at medical unit of holy family hospital Rawalpindi from January 2019 to June 2019. 50 patients aged between 10 to 50 years (diagnosed with moderate respiratory infections and having breathing difficulties who were at risk of catching viral infections) admitted in hospital for a duration of 2-3 weeks fulfilling inclusion criterion were enrolled in the study after signing informed consent. The candidates were allocated in two equal groups i.e. experimental and Control group via random sampling technique. Participants in experimental group received specially designed regime of anti-viral (oseltamivir orally and intravenous infusion of peramivir for 5 days + their regular treatment) drugs as a prophylactic measure along with provision of hygienic environment in separate isolation rooms cleaned with sodium hypochlorite. Participants in Control group received general treatment without any specific anti-viral cover and were kept in wards along with other patients where hygienic conditions weren't appreciable at all. A specially designed semi-structured questionnaire was used to analyze Pre and post treatment reduction in respiratory symptoms score, A score of 7-10 was considered as severe, 5-6 as moderate and 1-3 as mild and improvement in quality of life in both groups. The data was analyzed using statistical package for social sciences

(SPSS) version 21. *Independent t-test* was applied to find out differences between control and experimental group. A *p-value* of <0.05 was considered significant.

RESULTS: The purpose was this study was to review effectiveness of prophylactic anti-viral therapy in prevention of viral diseases

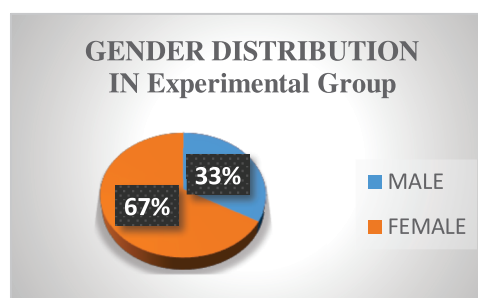


Figure 2 shows that (67%) were female participants and (33%) were males.

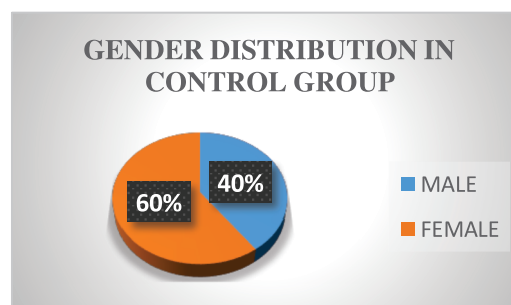


Figure 2 shows that (60%) were female participants and (40%) were males.

Table 1: Pre and Post Treatment Mean Difference in Respiratory symptoms and health related quality of life score in experimental and control group.

Variables	Group	Mean	Std. Deviation	<i>P- value</i>
Pre-treatment Respiratory symptoms score	Experimental	9	11.501	0.165
	Active	10	14.269	
	Control			
Post-treatment Respiratory symptoms score	Experimental	2	20.950	0.001
	Active	6	8.756	
	Control			
Pre-treatment HQROL score	Experimental	13	11.501	0.183
	Active	10	14.269	
	Control			
Post-treatment HQROL score	Experimental	21	20.950	0.00
	Active	15	8.756	
	Control			

Table 1 shows independent t-test interpretation of Respiratory symptoms and Health related quality of life. In case of respiratory symptom score, Pre-treatment score in experimental group, Mean \pm SD = 9 \pm 11.50 whereas in active control group, Mean \pm SD = 10 \pm 14.269 and the *P*-value = 0.165. Post-treatment score in experimental group, Mean \pm SD = 2 \pm 20.950 whereas in active control group, Mean \pm SD = 6 \pm

8.756 with a *P*-value = 0.001. In case of respiratory HRQOL score, Pre-treatment score in experimental group, Mean \pm SD = 13 \pm 11.50 whereas in active control group, Mean \pm SD = 10 \pm 14.269 and the *P*-value = 0.183. Post-treatment score in experimental group, Mean \pm SD = 21 \pm 20/950 whereas in active control group, Mean \pm SD = 15 \pm 8.756 with a *P*-value = 0.000.

Figure 3: Post-Treatment Improvement in Quality of Life between Experimental and Control Group

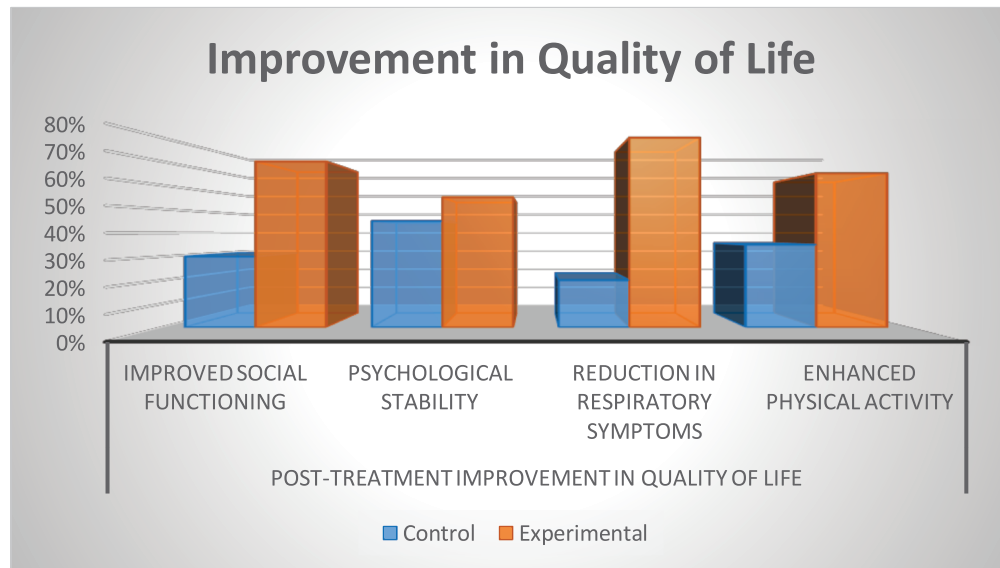


Figure 3 shows maximum improvement in terms of social functioning and reduction in respiratory symptoms in experiment group as compared to Control group.

Figure 4: Post-Treatment Frequency of suppurative viral infection between Experimental and Control Group

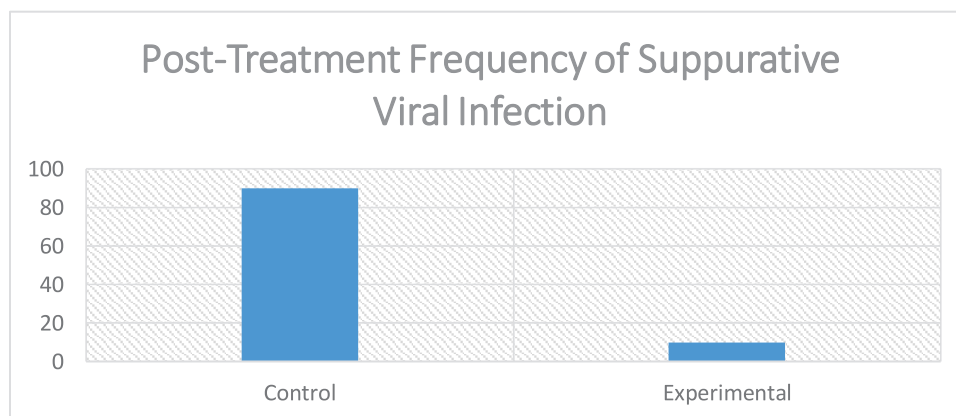


Figure 4 shows 90% post-treatment suppurative viral infection cases in control group who lacked prophylactic anti-viral cover and weren't provided with adequate preventive facilities.

Figure 5: Post-Treatment Frequency of Recovery between Experimental and Control Group

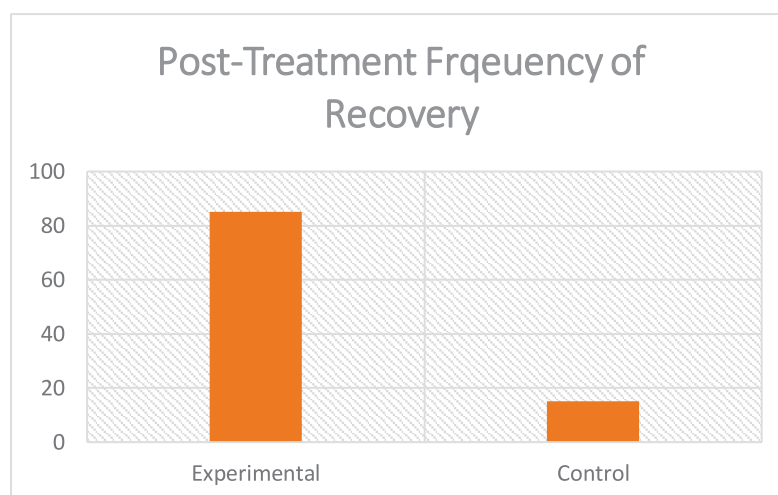


Figure 4 shows maximum post-treatment recovery in experimental group where participants received prophylactic anti-viral regimen of oseltamivir and pramivir along with provision with best preventive facilities

DISCUSSION

Viral diseases are characterized by serious clinical symptoms capable of threatening an individual's life (2). Viruses are highly contagious and are relatively very small as compared to bacteria's along with that they possess more lethal toxins and replicate very quickly to impose their manifestations (6). Viruses usually end up into pandemic situations especially when a new virus emerges in any place as its quite difficult have an exact idea of its emergence, source of its outbreak and moreover its genome is

way complicated than bacteria's as a result microbiologists require certain duration of time to identify its genomic sequence (10,11). Anti-viral vaccines have profound effects along with administration of prophylactic anti-viral drugs in individuals who are at high risk of falling victims of viral infections. Previous researches suggest that immunocompromised individuals such as malnourished children, underweight females, chronic smokers, cancer patients and individuals having sedentary life styles

are usually at high risk of developing a viral infection (15, 16). Commonly known viral infections pose serious respiratory complications, as viruses spread very rapidly via cough or sneeze droplets, some viruses are earth borne in nature and can persist on clothes and metallic appliances for few hours (19). As per previous evidence, strict preventive measures can reduce its spread as in isolation of the patient, regular hygiene maintenance of the patients, covering mouth while coughing or more appropriately using facial masks for it, cleaning hospital floors with sodium hypochlorite, wearing gloves

CONCLUSION

It is concluded that prevention is always better than cure. Viral diseases can only be controlled by taking sufficient precautionary measures. In current study individuals who were at risk of developing viral pneumonia or systemic acute respiratory distress syndrome admitted in medicine wards were administered with prophylactic anti-viral cover along with provision of highly

while assessing a patient and due usage of hand sanitizers. Public health policies must focus on preaching preventive measures after knowing mode of spread of virus and its prodromal period. In cases of pandemic worldwide precautions should be taken into consideration after researching and having due understanding regarding contagious nature of the virus. Social media awareness programs can help in reducing the wave of spread but government needs to keep an eye on these activities so that rumors might not create chaos among people and community.

hygienic environment as a result they got less nosocomial infections and recovered quickly as compared to cases in control group who lack these measures.

Acknowledgement: We are grateful to all the participating patients

Conflict of Interest: None.

Source of Funding: None

REFERENCES

1. Carrat F, Sahler C, Rogez S, et al. Influenza burden of illness: estimates from a national prospective survey of household contacts in France. *Arch Intern Med* 2002; 162:1842–8.
2. Nicholson KG. Human influenza. In: Nicholson KG, Webster RG, Hay AJ, eds. *Textbook of influenza*. Oxford: Blackwell Science, 1998:219–64
3. Fox JP, Hall CE, Cooney MK, Foy HM. Influenza virus infections in Seattle families, 1975–1979. *Am J Epidemiol* 1982; 116:212–42.
4. Stuart-Harris CH, Schild GC, Oxford JS. *Influenza: the viruses and the disease*. 2nd ed. London: Edward Arnold, 1985.
5. Taber LH, Paredes A, Glezen WP, Couch RB. Infection with influenza A/Victoria virus in Houston families, 1976. *J Hyg (Lond)* 1981; 86:303–13.
6. Hayden FG, Belshe RB, Clover RD, Hay AJ, Oakes MG, Soo W. Emergence and apparent transmission of rimantadine-resistant

- influenza A virus in families. *N Engl J Med* 1989; 321:1696–702.
7. Galbraith AW, Oxford JS, Schild GC, Watson GI. Protective effect of 1-adamantanamine hydrochloride on influenza A2 infections in the family environment: a controlled double-blind study. *Lancet* 1969; 2: 1026–8.
 8. Bricaire F, Hannoun C, Boissel JP. Prevention of influenza A: effectiveness and tolerance of rimantadine hydrochloride [in French]. *Presse Med* 1990; 19:69–72.
 9. Galbraith AW, Oxford JS, Schild GC, Watson GI. Study of 1-adamantanamine hydrochloride used prophylactically during the Hong Kong influenza epidemic in the family environment. *Bull World Health Org* 1969; 41:677–82
 10. Hayden FG, Gubareva LV, Monto AS, et al. Inhaled zanamivir for the prevention of influenza in families. *N Engl J Med* 2000; 343:1282–9.
 11. Monto AS, Davenport FM, Napier JA, Francis T Jr. Modification of an outbreak of influenza in Tecumseh, Michigan by vaccination of schoolchildren. *J Infect Dis* 1970; 122:16–25.
 12. Hurwitz ES, Haber M, Chang A, et al. Effectiveness of influenza vaccination of day care children in reducing influenza-related morbidity among household contacts. *JAMA* 2000; 284:1677–82.
 13. Clover RD, Crawford SA, Abell TD, Ramsey CN Jr, Glezen WP, Couch RB. Effectiveness of rimantadine prophylaxis of children within families. *Am J Dis Child* 1986; 140:706–709
 14. Reichert TA, Sugaya N, Fedson DS, Glezen WP, Simonsen L, Tashiro M. The Japanese experience with vaccinating schoolchildren against influenza. *N Engl J Med* 2001; 344:889–96
 15. Crawford SA, Clover RD, Abell TD, Ramsey CN Jr, Glezen P, Couch RB. Rimantadine prophylaxis in children: a follow-up study. *Pediatr Infect Dis J* 1988; 7:379–83.
 16. Treanor JJ, Hayden FG, Vrooman PS, et al. Efficacy and safety of the oral neuraminidase inhibitor oseltamivir in treating acute influenza: a randomized controlled trial. *JAMA* 2000; 283:1016–24.
 17. Welliver R, Monto AS, Carewicz O, Schatteman E, et al. Effectiveness of oseltamivir in preventing influenza in household contacts: a randomized controlled trial. *JAMA* 2001; 285:748–54
 18. Diggory P, Fernandez C, Humphrey A, Jones V, Murphy M. Comparison of elderly people's technique in using two dry powder inhalers to deliver zanamivir: randomised controlled trial. *BMJ* 2001; 322:577–9
 19. Monto AS, Pichichero ME, Blanckenberg SJ, et al. Zanamivir prophylaxis: an effective strategy for the prevention of influenza types A and B within households. *J Infect Dis* 2002; 186:1582–8

Physiological, psychological and socio-economic impact of rheumatic fever at global perspectives

Mansoor A¹. Shiekh, Iqra Naseem², Ishaq Khan³

1. Professor, Zohra Institute of Health Sciences
2. Assistant Professor, Rehabilitation Department, Yusra Medical and Dental College
3. Professor, Department of Neurosciences, University of Weldon, USA

ABSTRACT

Objective: The objective of this review article is to briefly synthesize the most current information and data regarding rheumatic fever, its psychological and physiological manifestations, along with its treatment and prognosis.

Methodology: A literature search was conducted using Pub Med, Pedro and Cochrane databases for articles published between 2008 and 2018 using keywords relevant to the objective of the review. After eliminating irrelevant results, the authors read each article in its entirety to determine applicability for inclusion. A more general web search for synthesis articles and government documents was also conducted.

Results: Rheumatic Fever is commonly reported in children after an attack of pharyngitis. There isn't any gender specification. Diagnosis is based on Jones Criteria along with immunological findings of elevated ASO and anti-DNase titers. Early diagnosis along with minor Jones criteria is followed by good prognosis and symptoms reduce with prompt administration of anti-biotics, corticosteroids, DMARDS and NSAIDS. Patients having diagnosed with major Jones criteria involving multiple body organs and joints had poor prognosis. Mortality rate in positive cases was in direct relationship with cardiac involvement specifically with worsened endocarditis. Patients suffering with chronic endocarditis had fallen victim of depression and anxiety disorders. Rheumatic fever affects ADLs of an individual in chronic cases resulting in socioeconomic and financial crisis for the patient and its family.

Conclusion: Rheumatic fever mainly affects multiple joints and cardiac muscles resulting in migratory polyarthralgia and endocarditis. Its cure lies in early diagnosis and regular administration of drugs.

Keywords: Rheumatic Fever, Jones Criteria, Migratory Polyarthralgia, Endocarditis

INTRODUCTION

Rheumatic fever is an acute immunologically mediated multisystem inflammatory disease that occurs after group of alpha, beta hemolytic streptococcal infections [1]. Rheumatic fever is best diagnosed on the basis of Jones criteria having two divisions. Minor Jones criteria involves factors like raised CRP & ESR levels along with fever whereas Major Jones criteria involves migratory joint disease, rheumatic heart disease (that involves inflammation of all parts of the heart but condition of the patient begins to deteriorate when valvular scarring results from chronic inflammation), Sydenham chorea and subcutaneous nodules on extensor surface and erythema marginatum [2-3]. Acute rheumatic most often occurs in children and in 20% of the cases in adults as well. Clinical symptoms include, Fever, fatigue [4], sore throat, painful and swollen joints i.e. polyarthritis, pericardial friction rub, arrhythmias, infective myocarditis and endocarditis, cardiac dilatation leading to valvular scarring followed by mitral stenosis and ultimately chronic heart failure. In addition to clinical manifestations another foremost concern is related psychological impacts of the disease. Patients fighting with

chronic rheumatic fever suffers from episodes of anxiety, depression and panic attacks because of lack of social involvement, social life and chronic illness [5]. In severe cases patients get bed bound and lose control of their voluntary movements replaced by involuntary purposeless movements of extremities, as a result they cannot perform their instrumental activities and become handicapped. These limitations add up to the social burden of the society [6-7]. Rheumatic fever is best treated by prompt administration of antibiotics, NSAIDS, corticosteroids specifically prednisolone, anti-epileptic drugs and Disease modifying anti-rheumatic drugs in the chronic cases. Early diagnosis assure speedy recovery and least possible involvement of multiple organs [9]. Multiple studies have been done so far on clinical impact of rheumatic fever, yet there is a need to evaluate global impact of the disease that how rheumatic fever has affected individuals in other countries and what's the mortality rate in those countries and how disease is cured in the western world. The sole purpose of this study is to evaluate the global impact of rheumatic fever.

METHODOLOGY

This review was conducted using searches of scholarly literature published between 2008 and 2018. To locate relevant articles, the authors searched the Pub Med and Cochrane databases using the following search terms, alone and in combination:

rheumatic fever, Physiological impact, Psychological impact, Jones criteria, Global impact, socioeconomic impact. In the next, the researchers reviewed the articles of all search results to determine their relevance to the objective of this review. Articles dealing

with clinical implications along with treatments protocols of rheumatic fever focusing on medical and psychosocial rehabilitation of the cases in different countries were considered for inclusion (Figure 4). To extract data, the authors read each selected article in its entirety and

recorded the sample, setting, method, result, and conclusion of each. Finally, a wider internet search was conducted using Google to identify relevant government documentation pertaining to treatment guidelines. The articles selected for inclusion are reviewed in the results section.

RESULTS

Signs and Symptoms

Rheumatic fever is one of the complication of streptococcus sore throat infection. It is commonly reported in children of age between 5 to 15 years of age. It involve multiple systems and initiates an immune cascade and inflammatory response followed by elevated count of ASO and Anti DNase antibodies against hemolytic toxins [7]. Early symptoms of the disease fulfill minor jones criteria including fever, chills, fatigue, sore throat, dysphagia, thick bloody discharges from nose, nausea, vomiting, headache, raised erythrocyte sedimentation rate and c reactive protein levels [11]. Chronic and worsening symptoms begin with involvement of multiple joints leading towards polyarthritis i.e. painful, swollen joints making mobility difficult. Arthralgia and myalgia are commonly reported. In addition to articular manifestations cardiac involvement or rheumatic heart disease is

responsible for mortality rate among cases of rheumatic fever. Cardiac issues begin with myocarditis, endocarditis and pericarditis followed by periods of pleural rub and arrhythmias. Prolonged infection leads to cardiac dilatation, mitral insufficiency, left ventricular hypertrophy and ultimately chronic heart failure [12]. Neurological manifestation of rheumatic fever involves involuntary purposeless, jerky and uncontrollable movements of extremities i.e. Sydenham chorea. Dermatological involvement includes hot ragged rashes as in erythema marginatum and subcutaneous nodules on extensor surfaces [5]. Chronic patients often have psychological complications i.e. decrease in attention span, inattentiveness, aggression, rapid outbursts of laughter or crying spell leading towards panic attacks and gloomy nature.

Etiology and epidemiology

Rheumatic fever is reported after unresolved and complicated sore throat infection cause by a group of alpha and beta hemolytic streptococci i.e. the most common cause of the disease. Previous evidence suggests that antibodies against a specific M protein in

certain streptococcal strains binds to proteins in myocardium and cardiac valves causing cellular injury via activation of immune cascade and Fc receptor binding cells [2-4]. CD4 and T cells that recognize streptococcal peptides can cross react with

hosts antigens and elicit cytokine mediated inflammatory response [5]. As per the literature rheumatic fever is usually seen in newborns and in children ranging between age of 5 to 15 years. Underdeveloped and developing countries are more at risk of developing immunological disorders. So far South Africa has reported (30% cases among children), Thailand (20%), Australia (18%) and Pakistan (40%). In USA number of cases diagnosed with rheumatic fever aren't

considerable due to advanced measures taken by the state [1-3]. In 2013 20% individuals of sub-Sahara desert were diagnosed with rheumatic fever having cardiac manifestations [5]. 30 % cases diagnosed with rheumatic fever had neurological complications. About 15-20% reported psychological issues including bipolar depression and frequent episodes of panic-attacks.

Progression and Diagnosis

Some patients may experience a variable period of remissions or relapses, depending upon the intensity of inflammatory damage and immunity. Evidence of cardiac involvement is defined in cases resulting in advanced inflammatory changes of myocardium and endocardium coupled with super-imposed infection. [13]. Diagnosis is made upon minor and major Jones criteria.

Treatment

Healthy dietary measures, good nursing care, and appropriate antibiotic regimens can improve the outlook for patients with early diagnosis of rheumatic disease. Aggregate data show that 70%- 80% of patients with effective anti-biotic administration, nursing care, and prompt follow up improve without proceeding towards cardiac anomalies [6]. Hospitalization and prolonged treatment may be required in the 10%-15% patients with acute infection, impaired immunity, active inflammatory response and evidence of myocardial tissue necrosis after prolonged duration of infection [7]. In chronic cases mitral valvotomy and valve

Early recovery is inversely related to cardiac involvement. Poor prognosis is reported in cases having advanced myocardial damage and massively raised titers of Anti-DNAse anti-bodies. Blood CP, ESR findings, Serology testing and immunological investigations along with x-rays and MRI confirm the nature of disease [5].

replacement surgeries are taken into consideration due to worsening mitral regurgitation followed by mitral valve prolapse. A recent analysis showed that 5%-9% of rheumatic fever patients proceeded to inevitable cardiac failure [8]. These patients were characterized by mitral insufficiency, evidence of cardiac dilatation, complicated left ventricular hypertrophy leading towards congestive heart failure, and poor early prognosis. Treatment with anti-biotics, corticosteroids and NSAIDs has a prompt role in good prognosis or course of the disease [9].

DISCUSSION

Rheumatic disease is an emerging teenage complication in developing and underdeveloped countries owing social and psychological manifestation as well along with clinical symptoms, usually seen as secondary complication of an episode of pharyngitis caused by alpha and beta hemolytic strep [1-2]. It normally affects children of age between 5 to 15 years. Sore throat that remains untreated is in direct relationship and association with symptoms of rheumatic fever [6]. It is an autoimmune disorders so immunological findings report antibodies against host's own tissues [7]. Early diagnosis is dependent upon minor Jones criterion and prompt treatment facilities involving properly designed regime of anti-biotics, corticosteroids and NSAIDS along with good nursing care are associated with good prognosis [8]. Poor Prognosis is associated with active disease resulting in myocardial damage, valvular hypertrophy [10], complicated skins rashes, worsening neurological complication such as Sydenham chorea, acute inflammatory

cascade heading towards cardiac dilatation [11-12] that eventually leads to congestive heart failure. These data have important implications for health care providers. Patients with history of repeated attacks of sore throat and pharyngitis should be strongly advised to undergo antibiotic treatment to improve overall health and prevent progression towards cardiac anomalies [14]. Public health agencies should continue emphasis on rheumatic fever awareness programs and health education policies, and educators should include regular sessions ensuring prompt recovery of rheumatic disease and that it is curable if diagnosed at early stages. Additionally, research and reviews like the present article are important, especially in developing countries. In such areas, there may be less data available regarding the health consequences of rheumatic fever. Regular reporting on health consequences of rheumatic fever is important to change public opinion and improve public health.

CONCLUSION

As per the above conducted the systematic review Rheumatic fever is the most commonly reported complication after an acute episode of pharyngitis in children aged between 5 to 15 years that can have harmful consequences such as neurological and cardiovascular manifestations. Public health agencies should continue emphasis on rheumatic fever awareness and control

programs and health education policies should focus on developing strategies that can lead towards early diagnosis of the disease.

Acknowledgement: None

Conflict of Interest: None.

Source of Funding: None.

- prevention and control of rheumatic heart disease. *Nat Rev Cardiol.* 2013;10:284-92. doi: <http://dx.doi.org/10.1038/nrcardio.2013.34> PMID: 23546444
13. Viali S, Saena P, Futi V. Rheumatic fever programme in Samoa. *N Z Med J.* 2011;124(1329):26–35. PMID: 21475357
14. Moran M, Guzman J, Henderson K, Liyanage R, Wu L, Chin E, et al. Neglected disease research and development: a five year review. Sydney: Policy Cures; 2012

Prevalence of Idiopathic Headache in Working Adults

Ishaq Khan¹, Sultan Muzaffar², Usman Mansoor³, S. Shahab⁴

1. Professor, Department of Neurosciences, University of Weldon, USA
2. Professor, Department of Surgery, YMDC
3. Consultant Psychiatrist, ZIHS
4. Consultant Cardiologist, Department of Cardiology, Washington DC Hospital, USA

ABSTRACT

Objectives: The aim of this study was to evaluate the prevalence of idiopathic headache in adults of twin cities.

Methodology: Initially ethical permission was taken from all the participating adults. A total of 650 adults aged 25 to 35 both males and females fulfilling exclusion and inclusion criterion were enrolled in the study after signing consent forms. A specially designed questionnaire covering all the domains of psychosocial factors, healthy and unhealthy habits eating habits, work pressure, number of episodes of headache, involvement in social applications such as face book, twitter etc. was filled by all the participants. Data was analyzed using SPSS. Chi square test was applied at p value of 0.05.

Results: The study was conducted among 650 adults, out of which 350, (58.3%) were females and 300, (46.1%) were males. The age of the participants ranged from 25 to 35 and mean age was calculated as 28 ± 10.40 . Frequent episodes of headache i.e. twice a week were observed in 440 adults (67%) out of which 310 (70.4%) were working in private sector and 130 (29.5%) in government sector, 370(84%) were females and 70(15.9%) were males. Associated risk factors that led to idiopathic headache among government and private employees were, work load pressure in 170 (26.1%), unhealthy eating habits 100 (15.3%), excessive use of smartphone applications 185 (28.4%), Professional jealousy 65 (10%), status difference 40 (6.1%), self-complexion 50(7.69%) and fear of failure 35 (5.38%).

Conclusion: It is concluded that idiopathic headache is more prevalent among adults who suffer from high level psychological and emotion stressors.

Key words: Idiopathic headache, Adults, Socioeconomic stress, Self-complexion, Workload pressure.

INTRODUCTION

Idiopathic headache is one of the most widely recognized neurological side effect announced in youth and puberty, prompting large amounts of school unlucky deficiencies and being related with a few associated comorbid disorders, especially in cases of cerebrovascular and cardiovascular frameworks. Neurological and mental issues that are related with headache, are predominantly wretchedness, ADHD, nervousness issue, epilepsy, rest issue, anxiety attacks and Tourette disorder. It additionally has been demonstrated a relationship with allergic ailment and CVS infection, particularly in cases of patent foramen ovale and ischemic stroke. Cerebral pain is one of the most widely recognized substantial grumblings in young people and grown-ups (1). The predominance is evaluated to be 20–30% in the college going young people, with dynamic increment with age, up to qualities around 29–34% at the age of 25-35 years (thinking about month to month emergency), 78–94% (considering the nearness of migraine in any event once every year) (2). Until pubescence, it hasn't been seen sexual orientation contrasts (with a slight male power), at a later stage it has been noticed an expansion among females with a proportion of 3:6:1, then again, actually keeps going into adulthood (3). Commonness of headache in the grown-up populace ranges from 3.3% to 21.4% and it increments from immaturity to adulthood (4). Working grown-ups with cerebral pain, and specifically headache, have more terrible results, contrasted with those without headache, to the extent personal satisfaction and work spot absents (5) are concerned and they are bound to have other

substantial side effects (for example stomach torment) (6), nervousness and disposition issue, for example, sorrow (7). Because of its negative effect, on the WHO's positioning of reasons for incapacity, cerebral pain issue are brought into the 10 most crippling conditions for the two sexes, and into the five most incapacitating for ladies (8). Indeed, essential cerebral pains, and specifically headache, is related with a few comorbid conditions. Comorbidity is the nearness of coinciding extra condition in a patient with specific illness record, or the relationship of non-irregular two issue (9). In youngsters and youths, cerebral pain and headache are ordinarily connected with different infections, for example, mental and neurological comorbidity, specifically discouragement and tension, epilepsy, rest issue, ADHD. It likewise has been demonstrated a relationship with atopy, cardiovascular ailment, particularly ischemic stroke and PFO (10). The reason for this examination is to assess the related comorbidities that lead towards advancement of idiopathic migraine among working grown-ups. Numerous investigations have been directed to assess the clinical sign and indications related with cerebral pain and headache yet extra examinations concentrated on assessing the main driver of idiopathic migraine among youthful working grown-ups are required so as to create sufficient treatment plan knowing the real reason and, to upgrade working environment execution and to improve personal satisfaction in youthful grown-ups.

PATIENTS AND METHODS

It is a descriptive, cross sectional study that was carried out from July 2016 to December 2017 among working adults aged between 25-35 years. The working adults were divided into two strata's on the basis of socioeconomic status (high and middle). High socioeconomic group consisted of government employees whose monthly salary was between 50,000 to 1 lac. Middle socioeconomic group consisted of private employees whose monthly salary was between 20,000 to 40,000 and for each stratum, the offices were selected on convenience basis and then adults working there were selected through simple random sampling. Approval was taken from the offices to participate in the study. Participants were explained about the study logistics and informed consent form was signed. A written informed consent was taken from the government and private offices who agreed to participate in the study and also from the participants who agreed to participate. A total of 650 participants were selected on the basis of exclusion criterion (Adults who reported to use alcohol and other drugs had receive recently the treatment for drug problem, age greater than 35 or less than 25 years, having any psychotropic disorder and not willing to

participate were excluded) and inclusion criterion (age ranged from 25-35 years, not involved in any notorious drug intake activity, reported to have on and off attacks of headache and were willing to fulfill the survey questionnaire were included in the study. Different questionnaire which were used in previous studies around the world were examined and questionnaire was designed as multiple choice questions. Pilot testing was done and validity of the questionnaire was calculated by cronbach alpha which comes out to be 0.68. A specially designed questionnaire covering all the domains of psychosocial factors, healthy and unhealthy habits eating habits, work load pressure, number of episodes of headache, involvement in social applications such as face book, twitter etc. was filled by all the participants. Data was entered and analyzed in SPSS version 23. Descriptive and inferential statistics were taken into consideration for data analysis. Mean and standard deviation were calculated for quantitative variables, while for qualitative variables, frequencies and percentages were measured. Data was analyzed using Chi square test. P value of <0.05 was considered a significant.

RESULTS

The basic aim of this study was to evaluate the prevalence of idiopathic headache among working adults and to find out

associated psychological and social factors leading towards development of idiopathic headache among working adults.

Table 1: Demographic characteristics of Participants

Gender	Frequency	Percentage
Males	300	46.1%
Females	350	58.3%

Age Characteristic

Age Range	25-35
Mean Age	28± 10.40

Table 1 shows age and gender characteristics of participants enrolled in the study with an overall predominance of female gender i.e. 350,

58.3%% and males were 300, 46.1% out of total 650 patients, the age range was from 25-35 with mean age of 28± 10.40

Figure 1: Prevalence of idiopathic headache among participants

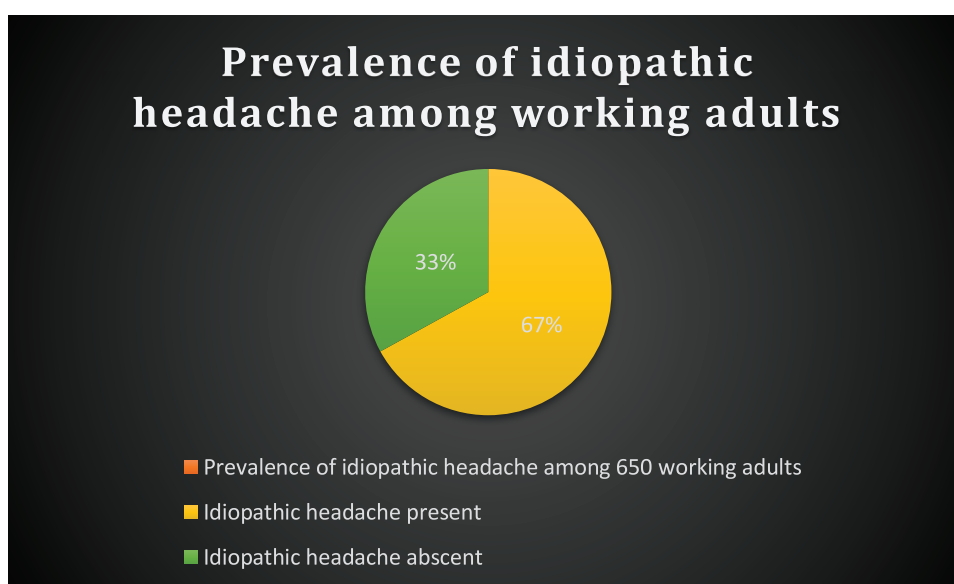


Figure 1 shows that out of total 650 participants idiopathic was reported by 440 participant i.e. 67% and it wasn't found in 210 participants i.e. 33%

Figure 2: Presence of Idiopathic headache among government and private employees

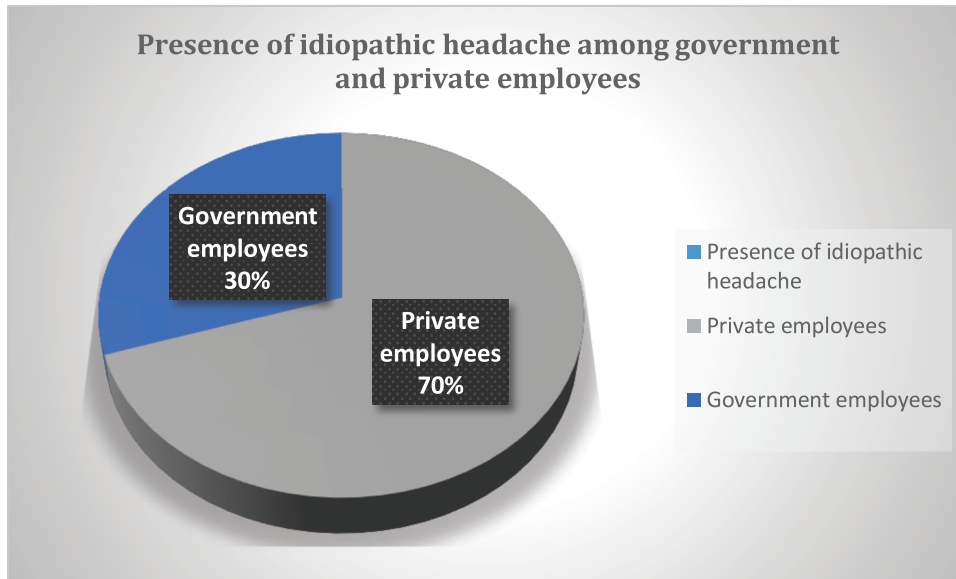


Figure 2 shows that 70% idiopathic headache is reported by private employees and 30% from government employees.

Figure 3: Shows Presence of Idiopathic headache among Male and Female participants

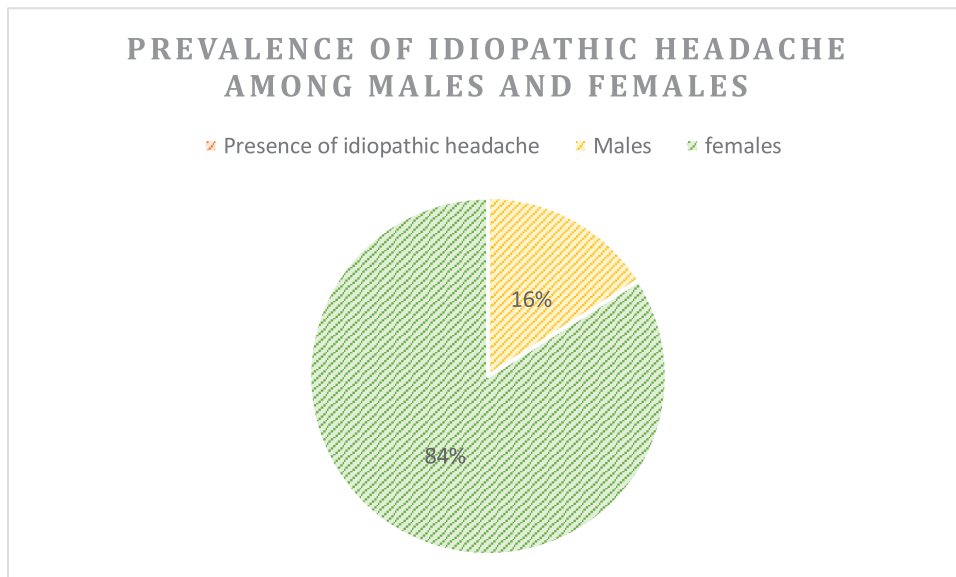


Figure 3 shows that idiopathic headache is more prevalent among females i.e. 84% and 13% in Males out of total 440 participants who reported to have idiopathic.

Table 2: Frequency of idiopathic headache episodes among N= 440 participants

Variables	Frequency	Percentage	p-value
Two episodes per week (Severe)	140	31.8%	0.001
Four episodes per month (moderate)	173	39.3%	0.001
One episode per month (mild)	127	28.8%	0.001

Table 2 shows severity of idiopathic headache episodes among total 440 participants who reported to have idiopathic headache, two episodes of headache per week were reported by 140 participants, four episodes per month by 173 and one episode per month by 127 participants.

Table 3: Associated risk Factors for Idiopathic headache among working adults

Variable	N	Percentage
Work load pressure	170	26.1%
Unhealthy eating habits i.e. eating junk food	100	15.3%
Excessive use of smartphone applications	185	28.4%
Professional Jealousy	65	10%
Status difference	40	6.1%
Self-complexion	50	7.69%
Fear of failure	35	5.38%

Table 3 shows associative risk factors that led to development of idiopathic headache among working adults as work load pressure in 170 (26.1%), unhealthy eating habits 100 (15.3%), excessive use of smartphone applications 185 (28.4%), professional jealousy 65 (10%), status difference 40 (6.1%), self-complexion

50(7.69%) and fear of failure 35 (5.38%) students.

It is evident from above mentioned results that idiopathic headache is reported by working adults not due to any physical pathology but mainly due to massive socioeconomic and psychological stress

DISCUSSION

In the past few decades, modern advancements in the field of technical industries has led to add on massive burdens on working adults (11). These modern advancements include promotion of class and status differences among government and private employees on the basis of monetary norms (12). Elite class government departments, software houses and bureaucrats within twin cities of Islamabad and Rawalpindi have introduced western norms and culture among working adults and they take pride in promoting an extravagant modern and lavish lifestyle that isn't affordable for middle class employees (13). Unfortunately, our elite class is of the view that these extra expenses will make their kids more efficient and on contrary people from low and middle socioeconomic status take extra burdens in order to make their kids eligible of studying in such institutes thinking it as a necessity of modern era. Such family pressures always add on massive stress on the bread earner of the family (14). Modern civilization never meant to create a wave of class or socioeconomic difference among struggling adults as it highly affects their mental growth, creative thinking and critical judgement (15). Apart from this professional jealousy (16) is another cause of stress among struggling adults that serves to be a trigger factor in migraine and headache, harsh tones and family stressors badly affects an adults psychological health, self-esteem and self-confidence (17). The major manifestation of family disputes is reported worldwide as migraine and headache among adolescents and adults. Unhealthy eating habits (18) such as eating lots of junk food, skipping breakfast and drinking soda drinks as being promoted by expensive fast food

brands and are considered as an expression of modern and advanced life. Pavone P conducted a survey regarding prevalence of headache among struggling adults and he concluded that idiopathic headaches are reported in three basic forms depending upon number of attacks per week or per month and these are graded as mild, moderate and severe attacks (19). These attacks can be triggered by visual auras, obnoxious sounds, alluring scents and bright lights (20). These finding support current study. Previous studies have variably discussed impact of work load pressure upon prevalence of idiopathic headache, In 2000 Masi G et.al conducted a study upon impacts of modern living style promoting massive burden on struggling employees and reported headache as its most common manifestation (21). Apart from this self-complexion is highly observed in middle class workers going to upper class government firms for seeking modern innovative knowledge (22). Feeling of self-complexion prevails among such young adults as they badly feel their status difference and take it as a peer pressure which highly affects their working performance (23), self-confidence and behavioral patterns. Fear of Failure is another factor that leads to development of headache and it is commonly observed when private employees cannot match up with the pace of modern advancements and cannot fulfill the demands and desires of their families (24). All the previous evidences are highly associated with results obtained from current study that High socioeconomic and psychological stress serves to be the major cause of idiopathic headache among working adults.

CONCLUSION

High socioeconomic stress, unjust promotion of monetary norms, massive work load pressures, prejudice behavior of elite class towards middle class, unhealthy eating habits, familial disputes specifically overtly increasing financial pressures and professional jealousy have been reported to

serve as the cause of idiopathic headache among young struggling adults and it's an alarming situation because these young adults are the future of our nation, they must be dealt with kind consideration so that they can overcome these hurdles.

Acknowledgement: We are grateful to all the participating working adults.

Conflict of Interest: None.

Source of Funding: None

REFERENCES

1. Perquin CW, Hazebroek-Kampschreur AA, Hunfeld JA, Bohnen AM, van Suijlekom-Smith LW, Passchier J, van der Wouden JC. Pain in children and adolescents: a common experience. *Pain*. 2000;14:51–58. doi: 10.1016/S0304-3959(00)00269-4.
2. Guidetti V. *Fondamenti di neuropsichiatria dell'infanzia e dell'adolescenza*. Bologna: Il Mulino; 2005.
3. Guidetti V, Lucchese F, Bellini B. Is the migrainous female brain different? Some new evidence. *Brain*. 2012;14(Pt 8):2311–2313.
4. Abu-Arafah I, Razak S, Sivaraman B, Graham C. Prevalence of headache and migraine in children and adolescents: a systematic review of population-based studies. *Dev Med Child Neurol*. 2010;14:1088–1097. doi: 10.1111/j.1469-8749.2010.03793.x.
5. Arruda MA, Bigal ME. Behavioral and emotional symptoms and primary headaches in children: a population-based study. *Cephalalgia*. 2012;14:1093–1100. doi: 10.1177/0333102412454226.
6. Galli F, D'Antuono G, Tarantino S, Viviano F, Borrelli O, Chirumbolo A, Cucchiara S, Guidetti V. Headache and recurrent abdominal pain: a controlled study by the means of the child behavior checklist (CBCL) *Cephalalgia*. 2007;14:211–219. doi: 10.1111/j.1468-2982.2006.01271.x.
7. Bruijn J, Locher H, Passchier J, Dijkstra N, Arts WF. Psychopathology in children and adolescents with migraine in clinical studies: as systematic review. *Pediatrics*. 2010;14:323–332. doi: 10.1542/peds.2009-3293.

8. Virtanen R, Aromaa M, Koskenvuo M, Sillanpää M, Pulkkinen L, Metsähonkala L, Suominen S, Rose RJ, Helenius H, Kaprio J. Externalizing problem behaviors and headache: a follow up study of adolescent Finnish twins. *Pediatrics*. 2004;14:981–987. doi: 10.1542/peds.2003-1103-L.
9. Lj S, Hagen K, Jensen R, Katsarava Z, Lipton R, Scher A, Steiner T, Zwart JA. The global burden of headache: a documentation of headache prevalence and disability worldwide. *Cephalalgia*. 2007;14(3):193–210. doi: 10.1111/j.1468-2982.2007.01288.x.
10. Feinstein AR. The pre-therapeutic classification of comorbidity in chronic disease. *J Chronic Dis*. 1970;14:455–468. doi: 10.1016/0021-9681(70)90054-8.
11. Chen TC, Leviton A. Asthma and eczema in children born to women with migraine. *Arch Neurol*. 1990;14:1227–1230. doi: 10.1001/archneur.1990.00530110087022.
12. Mortimer MJ, Kay J, Gawkrödger DJ, Jaron A, Barker DC. The prevalence of headache and migraine in atopic children: an epidemiological study in general practice. *Headache*. 1993;14(8):427–431. doi: 10.1111/j.1526-4610.1993.hed3308427.x.
13. Breslau N, Davis GC, Andreski P. Migraine, psychiatric disorders, and suicide attempts: an epidemiological study of young adults. *Psychiatry Res*. 1991;14:11–23. doi: 10.1016/0165-1781(91)90102-U.
14. Guidetti V, Galli F. Psychiatric comorbidity in chronic daily headache: pathophysiology, etiology, and diagnosis. *Curr Pain Headache Rep*. 2002;14(6):492–497. doi: 10.1007/s11916-002-0069-7.
15. Wang SJ, Juang KD, Fuh JL, Lu SR. Psychiatric comorbidity and suicide risk in adolescents with chronic daily headache. *Neurol*. 2007;14(18):1468–1473. doi: 10.1212/01.wnl.0000260607.90634.d6.
16. Amouroux R, Rousseau-Salvador C. Anxiety and depression in children and adolescents with migraine: a review of the literature. *Encephale*. 2008;14(5):504–510. doi: 10.1016/j.encep.2007.08.005.
17. Margari F, Lucarelli E, Craig F, Petruzzelli MG, Lecce PA, Margari L. Psychopathology in children and adolescents with primary headaches: categorical and dimensional approaches. *Cephalalgia*. 2013. Epub ahead of print.
18. Gesztelyi G. Primary headache and depression. *Orv Hetil*. 2004;14(48):2419–2424.
19. Pavone P, Rizzo R, Conti I, Verrotti A, Mistretta A, Falsaperla R, Pratico AD, Grosso G, Pavone L. Primary headaches in children: clinical findings on the association with other conditions. *Int J Immunopathol Pharmacol*. 2012;14(4):1083–1091.
20. Ligthart L, Gerrits MMJG, Boomsma DI, Penninx BWJH. Anxiety and depression are associated with migraine and pain in general: an investigation of the

- interrelationships. *J Pain*. 2013;14:363–370.
doi: 10.1016/j.jpain.2012.12.006.
21. Masi G, Favilla L, Millepiedi S, Mucci M. Somatic symptoms in children and adolescents referred for emotional and behavioral disorders. *Psychiatry*. 2000;14:140–149.
22. Cahill CM, Cannon M. The longitudinal relationship between comorbid migraine and psychiatric disorder. *Cephalalgia*. 2005;14:1099–1100.
doi: 10.1111/j.1468-2982.2005.00982.x.
23. Ballottin U, Chiappedi M, Rossi M, Termine C, Nappi G. Childhood and adolescent migraine: a neuropsychiatric disorder? *Med Hypotheses*. 2011;14:778–781. doi: 10.1016/j.mehy.2011.02.016.
24. Merikangas KR, Angst J, Isler H. Migraine and psychopathology. Results of the Zurich cohort study of young adults. *Arch Gen Psychiatry*. 1990;14:849–853. doi: 10.1001/archpsyc.1990.01810210057008.