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RESEARCH ARTICLE

CLINICAL AND SOCIAL FACTORS ASSOCIATED WITH VIOLENT BEHAVIOR IN PERSONS WITH SCHIZOPHRENIA SPECTRUM DISORDERS

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Abstract

Study of the relationship between mental disorder and violent behavior is critical both from a public health perspective and for the proper planning and development of mental health services. However, the complex contribution of clinical, historical and environmental risk factors for violence in persons with schizophrenia remains unclear. The aim of the study was to identify clinical and social risk factors for violence in patients with schizophrenia and schizophrenia spectrum disorders (SSD) using a case-control design. Cases were defined as patients with SSD who had committed at least one act of offence in the past (94 patients were enrolled from forensic psychiatric ward). Controls were gender and age matched patients with SSD who had never committed violent acts (106 patients from general psychiatric services). A standard set of instruments was used to assess patients' exposure to a variety of risk factors. Data were collected through patient interviews and medical records. Study results showed, that increased risk of violence was associated with severity of positive psychotic symptoms, diagnosis of delusional disorder, irregular or no contacts with mental health services. Significant risk factors for serious violent acts were associated with comorbid alcohol misuse, impulsivity, persecutory delusions, decreased emotional response and unsatisfactory living environment. Study confirmed that the interaction of social and clinical factors with treatment related factors played an important role as determinants of violence. These factors should be the focus of treatment and management of patients with SSD to prevent violent behavior.

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Introduction:-

The dramatic worldwide increase in the incidence of intentional injuries has led the World Health Organization (WHO) to recognize violence prevention as a public health priority and to urge member states to take appropriate measures and programs to identify and address the problem (1996). According to a WHO world report violence is the leading cause of death among people aged 15-44 years, accounting for about 14% of deaths among males and 7% of deaths among females. Interpersonal violence imposes a huge public health burden as it increases the risks of

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chronic health and social problems and premature mortality. Consequently, the role of public health in the prevention of violence is critical (World Health Organization 2002,2020).

In connection with the above, research on the relationship between mental disorder and violence has gained particular relevance, which, in turn, has generated great interest among professionals and the general public. There is a widespread public perception that people with mental disorders are dangerous and liable to violent crimes. This belief is further reinforced by the tendency of the media to sensationalize crimes committed by persons with mental illness. This society perception contributes to the stigma faced by people with mental disorders, which in turn contributes to non-disclosure of the mental illness and decreased treatment seeking (Corrigan, 2004). Unfortunately, the scientific literature on the relationship between violence and mental disorder is heterogeneous and confusing, which contributes to the mythologizing of this issue and also leads to discrimination against these people. Most researchers and professionals agree that a combination of various biological and psycho-social factors plays a role in violence and aggression, although there are differing opinions regarding the importance of individual factors (Rueveand Welton, 2008). For the last 30 years, the study of the link between mental disorder and violence has been the subject of scientific research and significant progress has been made in identifying risk factors empirically related to violence (Steadman et al., 1998; Serper,2011; Halle, 2020). Some studies clearly support a direct link between mental disorder and violence (Krakowski, 1994; Link and Stueve, 1994; Douglas et al., 2009;Caqueo-Urizar et al. al, 2016), while other studies emphasize that not the psychiatric illness itself but the coexistence of alcohol and drug abuse is a significant risk factor for violence (Mulvey et al., 2006; Patterson et al., 2021; Soyka, 2000). As a result, there is considerable controversy in the mental health field regarding how to best interpret the link between mental illness and violence. (Buchanan,2008; Tori, 2008).Meta-analysis that included data from 20studies and 18,423 people, performed by Fazel and colleagues in 2009, studied scientific data from 1970 to 2009 on interpersonal violence and the risk of crime committed by people with schizophrenia and other psychoses compared to the general population. This meta-analysis show, that risk of violence was raised in individuals (of both genders) with psychosisand substance-abuse comorbidity (OR = 8.9) compared with general population controls.Compared to the general population, the risk of homicide is increased in individuals with psychosis (chance ratio is 19.5), regardless of substance abuse status (Fazel et al., 2009).Another large scale research has shown that severe mental disorder alone is not a sufficient predictor of future violence. Important role plays such factors as historical (past violence, physical abuse, juvenile detention, parental arrest), clinical (substance abuse, perceived threats), dispositional (age, sex, income) and contextual (recent divorce, unemployment, victimization). Most of these factors were endorsed more often by subjects with severe mental illness. In conclusion, the author points out that people with severe mental disorders are still more likely to engage in violent acts, largely because of other contributory factors associated with violence (Elbogenet al., 2009). Do people with mental disorders have an increased risk of violence? What additional factors influence aggressive behavior? Is it possible to reduce the risk of violent behavior? Studying these issues is still actual and important, both in terms of public health and for the proper planning and development of mental health services.

Methodology:-

The aim of the study was to identify clinical and social risk factors for violence in patients with schizophrenia and schizophrenia spectrum disorders (SSD) using a case-control design. Cases were defined as patients with SSD who had committed at least one act of offence in the past. Controls were gender-and age matched patients with SSD who had never committed violent acts.

Patients in both groups were evaluated for exposure to a variety of risk factors, such as historical (past violence, traumatic experience), clinical (substance abuse, severe psychotic symptoms, negative symptoms, treatment adherence), dispositional (impulsivity, lack of social skills) and contextual (unemployment, family conflicts, living environment, use of psychiatric services).

Participants

The case group included individuals who had been diagnosed with SSD, were convicted of a crime, and at the time of the survey, on the basis of a forensic psychiatric examination report, were undergoing compulsory treatment at the Forensic Psychiatric Unit of the National Center for Mental Health (Georgia, Khoni). The control group consisted of age- and gender-matched patients with SSD, who had never been convicted of a crime and were using a variety of psychiatric services (inpatient in Khoni, outpatient, and community mobile service in Rustavi Mental Health Centre, Georgia) at the time of the survey.

Criteria for inclusion in the study were: men and women of working age (18-65 years); diagnosis of schizophrenia and schizophrenia-spectrum disorders according to the 10th revision of the International Classification of Diseases (ICD 10). Written informed consent was obtained from the all study participants. Exclusion criteria for both groups were: Comorbid diagnosis of mental retardation; traumatic brain Injury, cancer, diagnosis of organic mental disorder; acute phase of the disease.

A total of 200 patients were recruited for the study - 94 patients in the violent-case group and 106 patients in the nonviolent-control group. A standard set of instruments (SAPS, SANS, GAF) was used to assess the risk factors. Data were collected through patient interviews and medical records. Quantitative data of the material were analyzed by the statistical program IBM SPSS 23. The study group was defined as dichotomous "case" and "control". Category variables were analyzed by Chi-square tests and continuous variables - by independent-tests for. The P value, odds ratio (OR) and 95% confidence intervals (CI) were calculated for each variable. $P < 0.05$ was considered significant.

Results:-

Most participants were male (in case group 90.4% of the respondents, mean age 39.8 years and in controls 86.8%, mean age 41.3 years). Only 19.1% of cases and 16.0% of controls were married. 24.5% in case group had incomplete secondary school education versus 7.5 in control group. Only 8.5% of cases had completed high education versus 17% in controls. In the case group, 28.7% were diagnosed with delusional disorder versus 7.5% in the control group. As the statistical analysis reveals, the diagnosis of chronic delusional disorder is associated with an increased risk of violence (OR = 4.7, $P < 0.001$), which is consistent with international research data. A study of medical histories revealed that persecution ideas were more common. Less severe disability is also a credible risk factor (OR = 9.58, $P < 0.001$). Which is somewhat correlated with the deep impairment of global functioning, which was largely represented in the control group. Thus, individuals diagnosed with delusional disorder were relatively over represented in the case group compared to controls, and patients at increased risk of violence had better levels of global functioning and no disability status, unlike the control group, which had more pronounced global functioning impairments and disabilities. In the case group, more patients lived with their parents (OR = 2.08, $P < 0.010$), which was partly related to unsatisfactory living environment and family conflicts, and in turn, there was an increased risk for family member of becoming a victim of violence. Unsatisfactory living conditions were also associated with the risk of violence (OR = 8.81, $P < 0.001$). Conflict in the family was more common in the case group (50%) compared to the control group (19.8%) (Table 1).

Table 1:- Demographic and Social Factors (Odds Ratio - OR, 95% Confidence Intervals, Chi2 – Distribution).

Risk Factors	OR	95% CI	Chi2	p
Diagnosis				
F20	0.25	0.14 – 0.47	19.10	< 0.001
F21	1.09	0.34 – 3.50	0.02	0.886 (NS)
F22	4.70	2.01 – 0.96	13.06	< 0.001
Disability Status				
Mild / Severe	9.58	5.09 – 8.05	52.51	< 0.001
Family members				
Lives alone	0.61	0.26 – 1.48	0.77	0.379 (NS)
Lives with own family	1.01	0.46 – 2.23	0.03	0.866 (NS)
Lives with expanded family	0.48	0.22 – 1.06	3.41	0.065 (NS)
Lives with parents	2.08	1.18 – 3.66	6.55	0.010
Living environment				
Not satisfied / Satisfied	8.81	4.20 – 18.51	38.92	< 0.001
Education				
Incomplete School education	3.78	1.60 – 8.94	10.08	0.001
School education	0.39	0.22 – 0.70	10.44	0.001
Incomplete high education	0.79	0.32 – 1.98	0.07	0.789 (NS)
High education	0.63	0.28 – 1.49	0.69	0.404 (NS)
College education	9.44	2.10 – 2.50	10.35	0.001
Unemployed	0.26	0.14 – 0.49	16.52	< 0.001
Temporally employed	8.96	3.56 – 2.57	25.60	< 0.001

There was no significant difference between groups in the duration of illness, although there was a trend towards defining mental illness the first time after an act of violence. It should also be noted that 44% of the patients in the diagnosed case group had an irregular visit to psychiatric services. The odds ratio of different variables in relation to the target outcome was distributed among the case-control groups as follows: Use of mental health services differed statistically significantly between the groups (OR - 3.15, $P < 0.001$); Use of outpatient services is inversely proportional to the risk of violence (OR - 0.41, $P < 0.05$); There were more than 1 or 2 hospitalizations in 10 years in the case group and the last 1 year they were not hospitalized at all (OR - 1.9, $P < 0.039$ and OR - 2.36, $P < 0.005$, respectively). In the case group, it was reliably revealed that for the last 1 year psychotropic drugs were either not prescribed or patients did not take the prescribed treatment (OR - 8.17, $P < 0.001$ and OR - 4.5, $P < 0.001$, respectively). Thus, 1 year before the offence patients either had no contact with psychiatric services or did not follow the prescribed treatment. These data from the study indicated that being without treatment for 1 year was a serious risk factor for violence.

Case group was further divided by severity of violence. Severe violence referred to homicide, assault resulting in injury or involving use of a lethal weapon, or sexual assault (75 persons). Analysis of the subgroups of serious-mild offenders showed that the victim of crime was a family member in 31.9% and a stranger in 36.8%, reliable risk factors were alcohol abuse (OR - 3.16, $P < 0.048$), irritability (OR - 2.87, $P < 0.035$), lack of close relations (OR - 3.18, $P < 0.035$), chronic delusions (OR - 8.50, $P < 0.001$), disorganized social behavior (OR - 6.08, $P < 0.034$), negative symptoms (emotional flattening) (OR - 3.94, $P < 0.009$) (Table 2).

Table 2:- Seerious-not serious violence Factors (Odds Ratio - OR, 95% Confidence Intervals, Chi2 –Distribution).

Risk Factors	OR	95%CI	Chi2	p
Hospitalization in the last year				
yes	0.32	0.12 – 0.89	5.05	0.025
Alcohol abuse				
yes	3.16	1.17 – 8.52	3.91	0.048
Frequency of alcohol assumption				
Twice in a week	3.56	0.69 – 18.48	2.49	0.114 (NS)
Several times in a month	10.09	2.02 – 50.45	9.92	0.002
Drug abuse				
yes	0.48	0.18 – 1.29	2.17	0.140 (NS)
Frequency				
Twice in a week	0.11	0.02 – 0.75	6.15	0.013
Several times in a month	1.10	0.26 – 4.65	0.02	0.897 (NS)
Occasionally	7.69	1.20 – 49.35	4.02	0.044
Irritability				
yes	2.87	1.05 – 7.88	4.43	0.035
Friends				
No	3.18	1.11 – 9.10	4.93	0.035
Social communication skills				
yes	0.29	0.11 – 0.79	6.26	0.012
no	1.12	0.41 – 3.13	1.86	0.172 (NS)
Persecutory delusions				
Marked	8.50	2.59 – 27.95	15.12	< 0.001
Ideas of reference				
Marked	0.80	0.28 – 2.31	0.17	0.680 (NS)
Ideas of control				
Marked	1.36	0.52 – 3.63	0.40	0.527 (NS)
Odd appearance				
Marked	1.36	0.52 – 3.61	0.39	0.531 (NS)
Disorganized social behaviour				
Marked	6.08	1.28 – 29.03	4.49	0.034
Aggressive behavior				
Marked	23.13	2.53 – 211.6	14.15	< 0.001

Stereotyped behavior				
Marked	2.73	1.01 – 7.40	4.05	0.044
Poor expressive gesticulation				
Marked	3.94	1.36 – 11.39	6.92	0.009
Poverty of speech				
Marked	3.00	1.07 – 8.43	4.57	0.033
Social inattentiveness				
Marked	3.27	1.15 – 9.26	5.27	0.022

Discussion:-

The study results confirmed that patients with SSD had more severe positive mental symptoms than controls; Statistical differences were found in the diagnosis of delusional disorder. The diagnosis of chronic delusional disorder was associated with an increased risk of violence, which is consistent with international studies. Medical records revealed that ideas of persecution were more common. Cases and controls did not differ significantly in terms of living alone or with family, income and there were no significant exposure to recent stressful events. However, there was a significant direct correlation between crime severity and unsatisfactory living conditions. Conflict situations in the family were more common in the case group (50%) compared to the control group (19.8%). It should be noted that the conflict in the family was directly related to impulsivity and living conditions. This clearly indicates that family members are concerned and need support and education. Cases and controls did not differ significantly with alcohol abuse, which contradicts international studies on the link between alcohol consumption and crime. However analyses of serious-mild violent groups have shown that alcohol abuse was a statistically significant risk factor for serious violence. Only 34% in the case group used mental health services vs 77.4% in controls. Treatment adherence data were more interesting. In the case group 28.7% did not follow the treatment regimen (control 13.2%) and 34% followed irregularly (versus 29.2% in the control group). It seems that the planning of significant interventions in this area is necessary to improve treatment tolerance, as this is directly related to the increased risk of serious violence, according to research data.

To our knowledge, there are no studies on the risk factors associated with violent behavior in patients with SSD in Georgia, thus study data presented valuable information on the psycho-social factors that contribute to the nature and frequency of violent behavior of patients with mental disorders in Georgia. Knowledge of risk factors will help professionals to develop special educational programs to work with the patient's close environment, as often they are the ones who experience emotional distress and can be victims of the violence. So the family education program will also protect their safety and improve family relations. Based on the analysis of the research results, it is possible to identify dynamic risk factors and offer appropriate interventions to reduce violence risk. Consideration of clinical and social risk factors for violent behavior in the development of community services will improve the mental health care of this group of people and avoid unwanted stigmatization. Measures to reduce the risk of violence in forensic psychiatric services may reflect the management of both clinical and social risk factors obtained from the study. The results of the study can be used for new, in-depth studies based on individual factors. Based on the results of the study, reducing the risks associated with violence will benefit both people with mental disorders and their close environment and community at large.

References:-

1. Buchanan A. (2008). Risk of violence by psychiatric patients: beyond the "actuarial versus clinical" assessment debate. *Psychiatric services* (Washington, D.C.), 59(2), 184–190.
2. Caqueo-Úrizar, A., Fond, G., Urzúa, A., Boyer, L., & Williams, D. R. (2016). Violent behavior and aggression in schizophrenia: Prevalence and risk factors. A multicentric study from three Latin-America countries. *Schizophrenia research*, 178(1-3), 23–28.
3. Corrigan, P. (2004). How stigma interferes with mental health care. *American Psychologist*, 59(7), 614–625.
4. Douglas, K. S., Guy, L. S., & Hart, S. D. (2009). Psychosis as a risk factor for violence to others: a meta-analysis. *Psychological bulletin*, 135(5), 679–706.
5. Elbogen, E. B., & Johnson, S. C. (2009). The intricate link between violence and mental disorder: results from the National Epidemiologic Survey on Alcohol and Related Conditions. *Archives of general psychiatry*, 66(2), 152–161.
6. Fazel, S., Gulati, G., Linsell, L., Geddes, J. R., & Grann, M. (2009). Schizophrenia and violence: systematic review and meta-analysis. *PLoS medicine*, 6(8), e1000120.

7. Halle, C., Tzani-Pepelasi, C., Pylarinou, N. R., &Fumagalli, A. (2020).The link between mental health, crime and violence.New Ideas in Psychology, 58, 100779.
8. Krakowski, M. I., &Czobor, P. (1994).Clinical symptoms, neurological impairment, and prediction of violence in psychiatric inpatients. *Hospital & Community Psychiatry*, 45(7), 700–705.
9. Krug E, Dahlberg L, Mercy J et al. World report on violence and health. Geneva: World Health Organization, 2002.
10. Link, B. G., &Stueve, A. (1994). Psychotic symptoms and the violent/illegal behavior of mental patients compared to community controls. In J. Monahan & H. J. Steadman (Eds.), *Violence and mental disorder: Developments in risk assessment* (pp. 137–159). The University of Chicago Press.
11. Link, B. G., Phelan, J. C., Bresnahan, M., Stueve, A., &Pescosolido, B. A. (1999). Public conceptions of mental illness: labels, causes, dangerousness, and social distance. *American journal of public health*, 89(9), 1328–1333.
12. Mulvey, E. P., Odgers, C., Skeem, J., Gardner, W., Schubert, C., &Lidz, C. (2006). Substance use and community violence: A test of the relation at the daily level. *Journal of Consulting and Clinical Psychology*, 74(4), 743–754.
13. Patterson, A., Sonnweber, M., Lau, S., Günther, M. P., Seifritz, E., &Kirchebner, J. (2021). Schizophrenia and substance use disorder: Characteristics of coexisting issues in a forensic setting. *Drug and alcohol dependence*, 226, 108850.
14. Rueve, M. E., &Welton, R. S. (2008).Violence and mental illness. *Psychiatry (Edgmont (Pa.: Township))*, 5(5), 34–48.
15. Sartorius N. (1998). Stigma: what can psychiatrists do about it?. *Lancet (London, England)*, 352(9133), 1058–1059.
16. Serper M. R. (2011). Aggression in schizophrenia.Schizophrenia bulletin, 37(5), 897–898.
17. Soyka, M. (2000).Substance misuse, psychiatric disorder and violent and disturbed behaviour. *British Journal of Psychiatry*, 176(4), 345-350. doi:10.1192/bjp.176.4.345.
18. Steadman, H. J., Mulvey, E. P., Monahan, J., Robbins, P. C., Appelbaum, P. S., Grisso, T., Roth, L. H., & Silver, E. (1998). Violence by people discharged from acute psychiatric inpatient facilities and by others in the same neighborhoods. *Archives of general psychiatry*, 55(5), 393–401.
19. Torrey E. F. (2002).Stigma and violence. *Psychiatric services (Washington, D.C.)*, 53(9), 1179. <https://doi.org/10.1176/appi.ps.53.9.1179>
20. Torrey, E. F., Stanley, J., Monahan, J., Steadman, H. J., & MacArthur Study Group (2008). The MacArthur Violence Risk Assessment Study revisited: two views ten years after its initial publication. *Psychiatric services (Washington, D.C.)*, 59(2), 147–152.
21. WHO global consultation on violence and health (1996). *Violence: a public health priority*. Geneva: World Health Organization.