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Factors Persuading Acid Attacks, a Modern Revenge Strategy against Women: A Study in West Bengal, India

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ABSTRACT

Today's world is witnessing an alarming rate of incidences of acid violence, especially against women. The situation in India is too much inexpressible. In most of the reported cases of acid attacks in India, the women become the sufferer for spurning suitors, refuse marriage proposals or denying dowry, and so on. The present study aims to recognize the underlying factors and evaluate perception variations among the respondents regarding determinants of acid violence. Exploratory factor analysis (EFA) has been done to determine the most responsible factors. T-test and/or one way ANOVA have been conducted to justify the assumed hypothesis. The results of this study reveal that rejection of marriage and love proposals, easy availability of acid in the open market, marital disputes, domestic violence and dowry demand, and low educational level are the main reasons behind such inhuman nuisance. The results of t-test and ANOVA signifies (<0.05) gender, age, and occupation wise perceptions variations for factor 1 and 3. But more or less all respondents agree with the fact that easy availability of acid in the open market (sig.>0.05) is the main factor of acid violence in West Bengal. This study might draw the government's attention to such kinds of merciless offense in West Bengal, strengthen laws and policies so that gender equity in society could be formed and an acid-attack free society could be developed.

Introduction:

"Enough is enough"! This is the time to raise our voice against the dreadful crime of 'acid attack', formally renowned as 'Vitriolage'(Nair, 2014; Kabir et al., 2016; Vietnam, 2014; Devesh & Meshram, 2015; Chandrashekar &Johny, 2017; Kaur et al., 2007; Kuriakose et al., 2017).In recent day's world is witnessing an alarming rate of incidence of interpersonal violence of acid attacks especially committed against women. Acid throwing is considered as a form of violent assault (Karmakar, 2003)generally referred as heinous act of throwing acid or likewise corrosive substance on an individual 'with an illicit goal to disfigure, maim, torture or kill' (Vietnam, 2014; Patel 2014; Kuriakose et al., 2017; Charity CAS, 2010).It is kinds of 'Intimate terrorism' because it involves premeditated throwing of chemical fluid onto another person with an intention to disfigurement out of jealousy and/or revenge (Nair, 2014; Vietnam, 2014; Welsh, 2009).This kind of sadistic offence is following a mountaineering altitude in recent days and most of the young innocent women and girls becoming the sufferers of such violence (Swanson, 2002; Kuriakose et al., 2017). It is widely witnessed that gender aspect is attached with acid violence where men used to throw acidic substances on women to take revenge as they cannot face women's rejection of love proposals and/or sexual advances (Vashishtha, 2013; Anwary, 2003; Menon and Vashishtha, 2013; de Castella, 2013; Mannan et al., 2006). In most cases, the perpetrator often used harsh chemicals targeting the face of the victims with an intention to disfigure and debilitate, which seem to be fiercer than murder (Patel, 201).Exposure to strong corrosive substances may result into dreadful consequences like serious burns

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that may cause poisoning, serious injury and severe excruciating pain. The victims die a hundred deaths physically and psychologically during her lifespan due to her horrific physical appearance.

likely to cause to the other person permanent or partial damage or deformity or disfigurement to any part of the body of such person"(Yeasmeen, 2013). According to National Crime Record Bureau (NCRB) in 2016, total

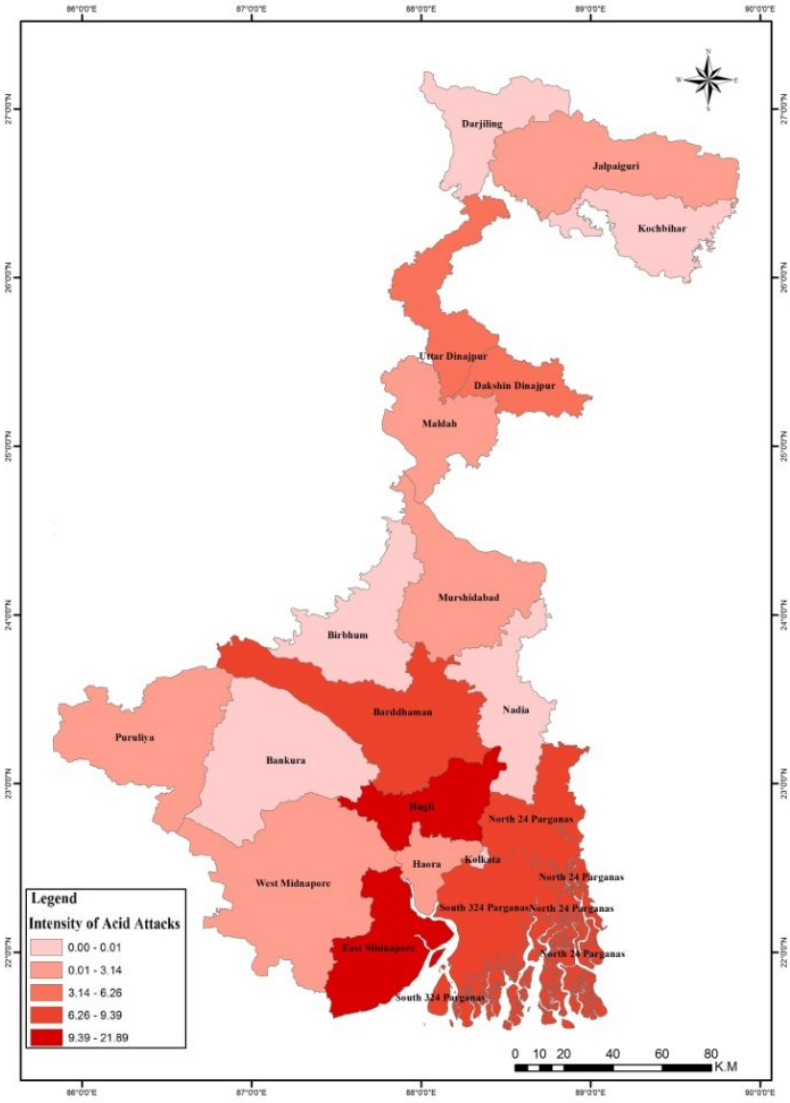

Fig. 1: Intensity of Acid Attacks against Women in West Bengal

Source: data.gov.in (2014)

1.1 Present Study

Nowadays incidences of Acid attacks especially against the young women in India have become a very burning issue. According to National Commission for Women the phrase 'acid attack' is defined as "any act of throwing acid or using acid in any form on the victim with the intention of or with knowledge that such person is

283 numbers of incidences of acid attacks (326 A IPC) have been reported in India and the total numbers of victims were 307. In 2016, West Bengal holds the leading position with 76 numbers of reported incidences of acid attacks against the human body followed by Uttar Pradesh (UP) (57 incidences), and Delhi Union Territory (UT) (21 incidences). In West

Bengal, acid attack is a very common form of gender-based violence committed especially against young women. Daily news reports depict the fact that women in West Bengal are not safe. Every day they face so many gruesome and deadly incidences like dowry death, sexual harassment, rape, forced prostitution, acid attacks and so on(Biswas & Chatterjee, 2017). In the case of cities in India, Kolkata (West Bengal) ranks 2nd after Delhi UT for the incidence of acid attacks (NCRB report, 2016). As per district-wise open government data (2014), in West Bengal intensity of acid attacks against women is relatively higher in the district of East Medinipur, North-24 Parganas, South-24 Parganas, Hugli, Bardhaman, Uttar Dinajpur and Dakshin Dinajpur (figure 1). Figure 1 also depicts that in North Bengal prevalence is quite rare compared to South Bengal. As per recommendation provided by Acid Survivors Foundation India's (ASFI) Kolkata based area office, a weak judiciary and policing system, poverty, illiteracy as well as gender discrimination are responsible for such horrible consequences in West Bengal. Besides, existing literature reveals that in Indian society the cheap availability of acid in the open market is highly responsible for intensifying the incidences of acid attacks against women (Nair, 2014).Acid is used by gold making shops or industries, motor servicing agencies, tiles factories, battery companies, computer part dealers etc. For these widespread applications, acid is easily available in the market. According to Menon and Vashishtha (2013), the most frequent ground of acid violence is "Love Rejection". The vindictive lovers never accept the refusal of the women as it humiliates his prestige, reputation and honour. Dowry demand is another renowned cause of acid attacks as many Indian women claim that due to their failure to meet the excessive monetary requirement of their in-laws they became the victims of such decisive violent behaviour (Yeasmeen, 2013; Menon and Vashishtha, 2013). Other causes related to acid violence are land or property related disputes, marital disputes, revenge in between families and other forms of sadistic pleasure by hurting someone else (Yeasmeen, 2013;Rahman et al., 2014). Acid Survivors Foundation of India (ASFI) provides a tactical frame to delineating the reasons for acid attacks represents in figure 2. ASFI recommended that near about 11 per cent of victims are unintentionally affected simply because being near to the victim by chance (ASFI report, 2017). Avon Global Centre for Women and Justice in their report also accept the truth that a significant number of victims are not intended targets, but are injured as they are nearer to the targeted victims(Kalantry and Kestenbaum, 2011).So, prior to the existing situation present study intends to recognize the underlying socio-economic, psychological as well as environmental factors that stimulate such notorious practice and

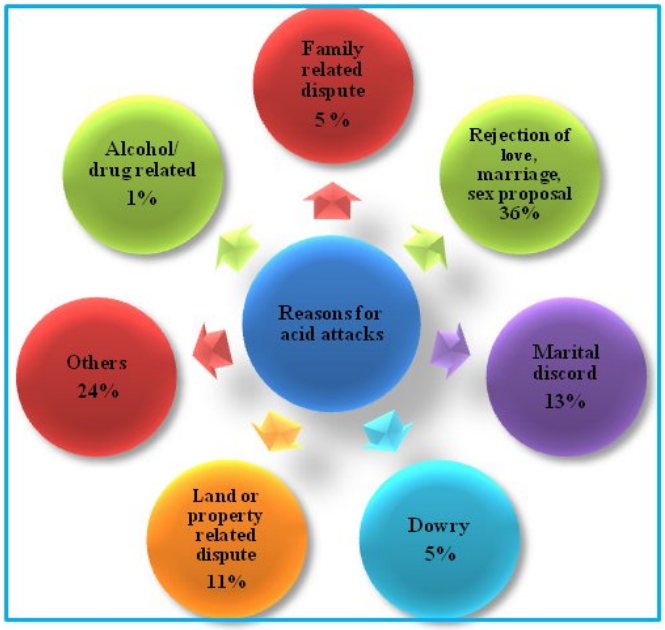

Fig. 2: Reasons associated with Acid Attack
Source: ASFI report, 2017, Situational Analysis of Acid Violence in Eastern India

recognize perceptions variations among the respondents regarding factors of acid violence. It is perceived that human behaviour is driven by certain traits which may vary from person to person based on their core faith, culture and social environment (Nettle, 2009).As for culture, human undoubtedly relies on socially transmitted learned information and behave likewise (Nettle, 2009). So, the perception of criminological consent may vary person to person regarding their age, gender, occupation, socio-economic environment and so on. Prior research on intimate partner violence (IPV) argues with the fact that significant gender difference has not been found in IPV perpetration but all concur that factors contributing to such criminal act vary by gender (Arias et al., 1987; Nabors, 2010; Bethke&Dejoy, 1993; Straus & Ramirez, 2007).Besides, peoples from different age groups, different occupationalsettings have their own level of perception about criminal behaviour. Literature depicts that most of the victims of acid attacks are young women (Patel, 2014). So, perceptions of that age group on determinants of acid violence are varying with respect to other age groups. Also, the lawyers who dealt with the cases of acid attacks give their sole concern on the effectiveness of government rule on sale of acid and easy availability as the determinant of such nuisance rather than other factors. In this regard, we assume some hypothesis based on respondent's overview of the factors of acid attacks. The assumed Hypotheses are –

Hypothesis

$H_0$1: The perceptions (dependent variable) of acid attacks are not significantly varied across gender (Independent variable).

$H_0$2: There is no age group-wise significant variations have been found regarding the opinion of factors of acid attacks against women.

$H_0$3: Occupation-wise no significant differences have been found concerning with the factors.

The researchers also try to provide some strategic recommendations so that the government could take better policies to captivating special care of the survivors, at the same time punish the offenders and stop violence against women.

2. Methodology

2.1 Sample size

This study has been conducted as a part of project work which has been registered with Indian Council of Social Science Research (ICSSR, File No. Sc-2/ICSSR/ 2016-17/RPS) and approved by Institutional review board of Vidyasagar University. The study populations have been included 210 numbers of respondents belonging to different age, sex and occupational backgrounds. Basically, the general public, the survivors and their family members, college-going female students, lawyers, member of NGO's has been considered for conducting intensive interviews for this study. Stratified random sampling techniquehas been solely adapted to select the sample size population. Those respondents were interviewed who have voluntarily joined and shared their valuable opinions and experiences about the inhumane practice of acid attacks. Written informed consent has been obtained from each respondent after they were briefed about the study objectives and explained that the participation was voluntary and they could stop their participation at any time.The demographic profile of the sample population reveals that male respondents are 51.90 percent and female respondents are 48.10 percent.Majority of respondents' (52.38%) (Both male and female) are from young age group i.e., 15-30 years. Besides, perceptions of above 30 age groups have also done. In this study majority of respondents are college students (33.33%), and the remainingpart of the respondents are unemployed males (20.95%), the victims and their family members (9.52%), lawyers (17.14 %), and NGO's (19.05%). About 73.81% of respondents are educated at college graduate and higher level. Near about 67 percent of the respondents are unmarried.

2.2 Materials and Methods

To determine the major risk factors of acid attacks in West Bengal, factor analysis has been done. Factor analysis is a dimension reduction technique help to detect interrelationship among variables as well as elucidate these variables in terms of most determine dimensions or factors. In other words, factor analysis executes specific factors with maximum factors loading. According to Brown (2006)factor analysis is a statistical multivariate procedure to determine the possible underlying factor structure that account for the variation and co-variation among a set of observed variables. From newspaper reports, existing literature and earlier studies some socio-ecological factors have come in front that stimulates such criminal behaviour. To establish these factors as reliable in case of West Bengal, the researchers prepared a structured questionnaire consisting of 19 questions under some possible factors. These questions or items are subjected to the same numbers of respondents and

collect their opinion about the variables (say factors) endorse the incidence of acid attack by the method of 'prefer by adding marks' (Osman et al., 2016). Therefore, 5 points Likert scale (Likert, 1932) has been used to collect their opinion. Furthermore, Cronbach's alpha reliability test (Cronbach, 1951)has been performed for all subscale dimensions to measure the internal consistency and the reliability of the variables for further analysis. [The value of Cronbach's alpha above 0.7 is thought to be adequate (Nunnally, 1994). After that, the researchers run exploratory factor analysis (EFA) using extraction methods of principal component analysis with varimax rotation(Anderson and Gerbing, 1988)to identify the most valuable key factors of acid attacks that explained maximum variables in the best way. KMO (Kaiser-Meyer-Olkin) and Bartlett's test has been performed to test data eligibility by measuring the sample adequacy for each variable. After determination of factors, the researchers do mean score to determine satisfaction level among the respondents about the factors of acid attacks. Subsequently t-test and/ or one-way ANOVA have been done with the key factors (dependent) and various demographic factors (independent) to justify the assumed hypothesis (depending on the number of categories of individual variables. Here the researchers consider 'Gender' as a variable which has two categories male and female. So, for that t-test has been applied. Subsequently 'Age' has 4 categories i.e., 15-30 years male and female and 30-50 years male and female categories for which the researchers run ANOVA. To understand the result of ANOVA more accurately Robust Test of Equality of Means Welch Method has been used. To do all these statistics the researchers use SPSS 20 version software.

3.0 Analysis of data

3.1 Reasons Persuading Acid Attack in West Bengal and Perceptions Variations among the Respondents

From earlier studies, literature reviews, newspaper reports and in-depth interviews with victims, their families and neighbours, lawyers of the victims, NGOs and police authorities so many reasons of acid attacks against women in West Bengal has been come into front. The factor analysis helps the researchers to determine the major risk factors of acid attacks in West Bengal. But among them, initially60 out of 210 numbers of responses are considered as missed responses as their responses are quite mismatched as per value considered in Likert scale. Besides, the reliability of their responses is very less and they did not answer more than 15 per cent of the items, the threshold percentage outlined by Johnson (2003)for expulsion. We only accept 150 responses as trustworthy having a response rate of 71 per cent. MacCallum et al. (1999) have suggested for considering the level of communality of the variables for determining the minimum sample size population. According to them 'good recovery population factors can be achieved with samples that would traditionally be considered too small for factor analytic studies, even when *N* is well below 100' (MacCallum et al., 1999). They specified that the desirable mean level of communality is to be at least 0.7 so that the impact of sample size could be minimised. Therefore, Cronbach alpha value has been checked in each level to check reliability and internal consistency of the variables. The resulted Cronbach alpha value for each level is more than 0.7 which indicate strong internal consistency within variables (Table A3). The overall consistency is 0.879 also results in reliability in between variables (Table A1). Hence, the sample size population (N= 150) in this study seems to be appropriate. The resulted KMO (Kaiser-Meyer-Olkin) value is 0.801 and Bartlett's test result (taking 95% level of significance, á = 0.05) with p-value (sig.) of 0.000 which is <0.05 and also approximate Chi-square is 5271.468 with 171 degree of freedom (df) accept alternative hypothesis (H_1) that there may be a strong correlation between variables (Table A2).Therefore, it specifies that factor analysis is considered as the right method for further analysis of the datasets. Table A3 represent factor loadings of variables after varimax rotation with Kaiser Normalization resulted from EFA using extraction method of Principal Component Analysis resulted that 19 variables are clubbed into 4 major factors having considered Eigen value greater than 1. These factors are the rejection of marriage and love proposals; easy availability of acid in open markets; Marital disputes, Domestic violence and Dowry; and Low educational levels. Here percentages of variance determine the percentage of total variance expressed by each factor and these 4 extracted factors together explained 90.36% of the total variables.

Eigenvalue against each factor plotted in figure 3. Here the researchers can observe that after 4th factor there has been a sharp change found in the curvature of scree plot. It indicates that after factor 4 the total variance explained lesser and lesser amounts by the residual factors.

The mean score has been plotted in table 1 which reflects the level of satisfaction among the respondents regarding the reasons for acid attacks in West Bengal. From this table it seems to be clear that although

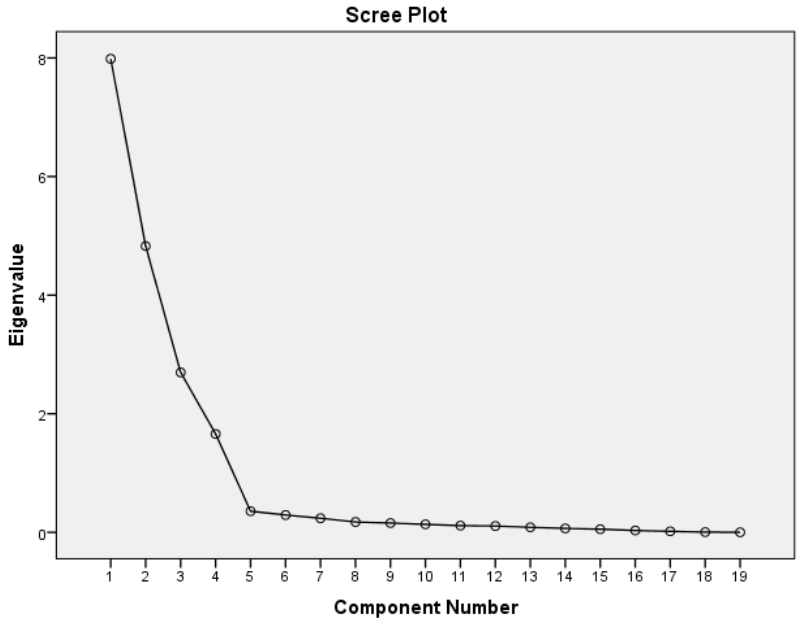

Fig. 3: Scree Plots of Eigen Values

factor 1 (i.e.rejection of marriage or love proposal) explain much of the variables (28.41%), but most of the respondents considered that easy availability of acid in open market and marital disputes and/or domestic violence and/or dowry are responsible for acid attack against women in West Bengal.

Table 1. Mean Score

Factors	N	Minimum	Maximum	Mean	Std. Deviation
fac_1	150	1.50	4.50	3.1867	1.25406
fac_2	150	1.40	5.00	**3.4360**	1.50580
fac_3	150	1.20	4.80	**3.5893**	1.31625
fac_4	150	1.33	5.00	3.2556	1.32346
Valid N (list wise)	150				

Source: Computed by Author

Table 2. Independent Samples t-test for $H_0$1 (Gender wise Perception Variations regarding Factors of Acid Attack)

Factors	t-test for Equality of Means		
	t	Df	Sig. (2-tailed)
Rejection of marriage and love proposal	-10.285	148	.000
	-11.725	98.776	.000
Easy availability of acid in open market	-.572	148	.568
	-.569	133.192	.571
Marital disputes, Domestic violence and Dowry	-3.985	148	.000
	-4.491	108.254	.000
Low educational level	-.104	148	.917
	-.104	136.190	.917

Source: Computed by Author

The result of the t-test has been given in table 2. From this table, the researchers can conclude that a significant difference (<0.05) has been found among male and female perception related to factor 1 and factor 3 of acid attacks. But the perception of both male and female about factor 2 and 4 of acid attacks are somehow matched yet there is slight variation found in the mean score.

perpetrators to take revenge against women by attacking them with corrosive substances.

The occupation wise perception variations among the respondents regarding factors has been reflected through the result of ANOVA (table 5). The result reflects that for factor 1, 3 and 4 perceptions between groups and within groups among respondents

Table 3. Descriptive Analysis and ANOVA Table for $H_0$2 (Age wise Perception Variations regarding Factors of Acid Attack)

Descriptive				ANOVA					
Factor	**Age**	**N**	**Mean**	**ANOVA**	**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
Rejection of marriage and love proposal	15-30 Years Male	43	-.6357612	Between Groups	62.679	3	20.893	35.338	.000
	30-50 Years Male	43	-.4743910						
	15-30 Years Female	34	.7607068	Within Groups	86.321	146	.591		
	30-50 Years Female	30	.7290837						
	Total	150	0E-7	Total	149.000	149			
Easy availability of acid in open market	15-30 Years Male	43	-.0635466	Between Groups	.381	3	.127	.125	.945
	30-50 Years Male	43	-.0171509						
	15-30 Years Female	34	.0445280	Within Groups	148.619	146	1.018		
	30-50 Years Female	30	.0652014						
	Total	150	0E-7	Total	149.000	149			
Marital disputes, Domestic violence and Dowry	15-30 Years Male	43	-.4602644	Between Groups	18.258	3	6.086	6.796	.000
	30-50 Years Male	43	-.0750559						
	15-30 Years Female	34	.2666436	Within Groups	130.742	146	.895		
	30-50 Years Female	30	.4650964						
	Total	150	0E-7	Total	149.000	149			
Low educational level	15-30 Years Male	43	-.1060461	Between Groups	1.168	3	.389	.385	.764
	30-50 Years Male	43	.0912880						
	15-30 Years Female	34	-.0564840	Within Groups	147.832	146	1.013		
	30-50 Years Female	30	.0851685						
	Total	150	0E-7	Total	149.000	149			

Source: Computed by Author

The mean score and ANOVA result from Table 3 reveals that age wise significance difference has been found for factor 1 and 3 among male and female respondents (sig. <0.05). Although the mean score for these two factors has been reflecting very minimum and lies close to zero. This means that though statistically their perceptions about factors of acid attacks somewhat differ yet it can be adjustable at a considerable manner. The result of the Welch method (table 4) also supports the ANOVA result clearly. On the other hand, significant differences have not been found for factor 2 and 4 (sig.>0.05). It incorporates that all age group irrespective of men and women concur on the point that 'Easy availability of acid in open market' and 'low educational level' enhance the scope to the significantly vary (sig. <0.05) yet not so much as mean score lies near to zero for all occupational groups. But significant differences have not been found for factor 2 i.e., 'easy availability of acid in open market' (sig.>0.05). More or less all quite agree with this fact of acid violence in West Bengal. As variances among all factors are not equal, Welch method is applied for minimising the errors (table 6). The Welch results also support the ANOVA result. Apart from these major factors that obtained from EFA so many other reasons are also responsible for acid violence in West Bengal that egress from the opinion of the respondents. These are like land or property disputes, family disputes, revenge etc.

Factor		Statistic[a]	df1	df2	Sig.
Rejection of marriage and love proposal	Welch	45.327	3	77.407	.000
Easy availability of acid in open market	Welch	.117	3	77.112	.950
Marital disputes, Domestic violence and Dowry	Welch	10.200	3	76.312	.000
Low educational level	Welch	.379	3	77.540	.768

a. Asymptotically F distributed.
Source: Computed by Author

Table 5. ANOVA Table for $H_0$3 (Occupation wise Perception Variations regarding Factors of Acid Attack)

Factor		Sum of Squares	df	Mean Square	F	Sig.
Rejection of marriage and love proposal	Between Groups	96.970	4	24.242	67.560	.000
	Within Groups	52.030	145	.359		
	Total	149.000	149			
Easy availability of acid in open market	Between Groups	3.529	4	.882	.879	.478
	Within Groups	145.471	145	1.003		
	Total	149.000	149			
Marital disputes, Domestic violence and Dowry	Between Groups	32.587	4	8.147	10.147	.000
	Within Groups	116.413	145	.803		
	Total	149.000	149			
Low educational level	Between Groups	9.087	4	2.272	2.354	.057
	Within Groups	139.913	145	.965		
	Total	149.000	149			

Source: Computed by Author

Table 6. Robust Tests of Equality of Means; Welch Method For $H_0$3

Factor		Statistic[a]	df1	df2	Sig.
Rejection of marriage and love proposal	Welch	63.885	4	58.080	.000
Easy availability of acid in open market	Welch	.893	4	46.349	.476
Marital disputes, Domestic violence and Dowry	Welch	16.754	4	51.948	.000
Low educational level	Welch	3.336	4	47.941	.017

a. Asymptotically F distributed.
Source: Computed by Author

4.0 Discussions

4.1 Understanding Acid Attacks in the Context of Gender Relation and Patriarchy

The 226th Report of Law Commission of India (Report no 226, July 2009, W.P.(Crl.) No. 129 of 2006) states that in Indian patriarchal society acid attacks have a specific sexual categorical dimension. Most of the reported cases of acid attacks in India, the women especially the young women become the sufferer rather than men for spurning suitors, refuse of marriage proposal or denying dowry and so on (Patel, 2014). The most vulnerable age group are 18 to 29 years of young women (Kalantry and Kestenbaum, 2011). Somehow, it seems that acid attacks against women perpetuate the inequality of women in society (Kalantry and Kestenbaum, 2011). Acid attacks are most predominantly considered as 'gendered form of violence' perpetrated within a patriarchal culture. Such kinds of gender-based criminal annoyances are very

much common in societies where gender inequality is very high and women play a subordinate role in respect to men (Kalantry and Kestenbaum, 2011). In the patriarchal society, men often make a mental map of power and mark the boundaries between women and themselves using women's appearances and sexuality (Anwary, 2003). The men always try to show off their masculine power over women to keep women in their place (Anwary, 2003). Therefore, they never accept the women's conceit, their haughtiness and get ready to take revenge.The patriarchal society of India as well as in West Bengal never accept women attitude and believe that throwing acid on her may act as a lesson to 'put her in her place' (Bhullar, 2014).By annihilating the physical appearance of women using corrosive substances, the vindictive offenders try to bolster their masculine power that seem to be humiliate when they were neglected by women like rejection of love or marriage proposals or sexual advances (Anwary, 2003; Menon and Vashishtha, 2013; de Castella, 2013; Mannan et al., 2006). Very often males are driven by the typical orthodox mindset that 'if I cannot have you, no one shall' (Bhalla, 2013).

4.2 Regulations on Sale of Acid in Open Market by Apex court and reality

In Laxmi vs. Union of India case (W.P. (Crl.) No.129/ 2006), the Supreme court of India on 18th July 2013 for the first time give emphasis regarding regulation on the sale of acid in open market ('The Poison Possession and Sale Rules, 2013', Writ Petition order dated 18 July 2013).By these rules the higher court directed the Government of India to circulate all the regulations related to sale of acidic substances to all states and UT's. Until such rules are made operational in all states and UT's the Chief Secretaries of concerned states/ Administrators of the UT's shall ensure the compliance of the rules. Beside these regulations acid and other corrosive substances are easily available in the open market of West Bengal. Kolkata Barabazar area is the main hub of acidic substances in Bengal. The battery and hardware retailers of sub urban regions of Kolkata metropolitan buy acid from the wholesalers of Barabazar (Kolkata) and sell in local market. In Ghatal, Paschim Medinipur district; Bongaon, Gaighata, Habra, Bagda. Ashok nagar of North-24-parganas district; Gopal nagar area of Hooghly district; Baishnabnagar in Malda district and many areas in Murshidabad and Nadia district acid is available effortlessly in bazaar, grocery shops, food corners, hardware shops and other shops of town or villages of these areas. Most of the retailers in these areas are not concern about the government rules, have no legal licence and sale acid in open market without any permission. But a single drop of acid is dangerous to burn human body. It is often heard to know through print media that Bengal police raid on the open markets and capable to seize so many sulphuric acid and nitric acid bottles from hardware shops, gold shops etc. Empty beer bottles are often used for storing acid in shops. Therefore, it is to be observed that despite existence of the government rules and undertaken initiatives to prevent such heinous crime ignorance of government rules is very much notice in West Bengal.

5.0 Conclusion

The present study has tried to make a portrait of merciless gender-based violence of acid attacks against women in West Bengal by evaluating the underlying context and compare the effectiveness of the existing regulations and the reality.This study reveals that the modern revenge strategy of acid attacks scar the lives of many teenagers and young women and sentenced them to a plight worser than death just for the reasons of rejection of love or marriage proposals, marital disputes, domestic violence and dowry demands, low level of education, and easy availability of acid in open markets. Although, the apex court of India provides guidelines for the sale of acid in the open market, yet it is very difficult to control the sale of acid. In many places, acid is still easily available at a very minimum cost without restricting buyer's information. According to Mr Bikramjit Sen, Assistance Director of Acid Survivors Foundation India (ASFI), 'in some recent cases, the offenders have managed to get acid from gold shops or battery factories with the help of someone close to them. Therefore, closely monitoring the acid retailers alone will not fruitful to control the issue. However, the central and state governments have adopted many effective strategies to prevent acid violence, but this heinous crime is still going on. Apart from these, in most cases, no FIR (First Information Report) is lodged to the police due to fear of retaliation and intimidation from the offenders' and their families. Hence, strict government role is needed to execute the laws and regulations, rigorous monitoring on selling of acid in the open markets, punish the offenders, provide proper medical supports and compensations to the victims.Moreover, government and non-government organizations' collaboration and cooperation, and civil societies role to make people aware of acid attacks may be effective to combat the situation.

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Conflict of Interest

Author Biswas, P. and Chatterjee, N.D. declare that there is no financial or personal interest or belief that could affect our objectivity. No potential conflicts exist throughout the work.

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Appendix

Table A1. Reliability Statistics of all Variables

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.879	.885	19

Source: Computed by Author

Table A2. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		**0.801**
Bartlett's Test of Sphericity	Approx. Chi-Square	5271.468
	df	171
	Sig.	.000

Source: Computed by Author

Table A3. Factor Loading of Determinants of Acid Attack

Variables Measures	Cronbach alpha, α	Component			
		Factor 1 Rejection of marriage and love proposal	Factor 2 Easy availability of acid in open market	Factor 3 Marital disputes, Domestic violence and Dowry	Factor 4 Low education al level
• Males always try to dominate women		.927			
• Rejection by women hart men's ego so they attack women by acid as revenge		.922			
• Women have the right to avoid unwanted person		.904			
• Most of the acid attack occur due to refuse suitors' proposal		.890			
• She must have her own decision whether to talk somebody or not	0.972	.880			
• She may reject love or marriage proposal given by suitors		.836			
• Safety have to maintain to store acid in home or any business shop			.993		
• Seller occasionally maintain registrar copy			.992		
• Easy availability of acid enhance the criminal activity of acid attack			.992		
• Acid use in household work like toilet cleaner, others work	0.989		.970		
• Acid is easily available in local shops			.960		
• Domestic violence is very common matter in every household				.891	
• Marital disputes found to be notice in many families				.885	
• Women should obey her husband and in laws is a very common to every household				.882	
• Basically dowry is the main reason for domestic violence	0.966			.858	
• To punish wife or daughter in law by thrown acid on her face to disfigure her is very common now a days				.853	
• Lower educational level influence the crime level					.953
• Education helps to improve self control	0.917				.919
• Education improves the mentality of a person					.900
Eigen value		5.398	4.831	4.348	2.591
% of Variance		**28.411**	25.426	22.886	13.637
Cumulative %		28.411	53.837	76.724	90.361

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization
a. Rotation converged in 5 iterations.
Source: Computed by Author