Risk Factors for Aggressive Behavior and Violence among Schizophrenic Patients

Thesis

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CBT	Cognitive behavioral therapy
CI	Confidence Interval
e.g.	For example
GABA	Gamma-Amin Obutyric Acid
GI	Gastrointestinal
NETI	National Executive Training Institute
NICE	National Institute of Clinical Excellence
NO	Number
P	P- value
PD	Personality disorder
PTSD	Post traumatic stress disorder
SPSS	Statistical Package for the Social Science
TCO	Threat/control-override
T-test	Paired T-test
WHO	World Health Organization
X^2	Chi –square test

Risk Factors for Aggressive and Violence Behavior among Schizophrenic Patients

Abstract

Acts of violence and aggression committed by patients with schizophrenia is a major public health concern affecting patients, their families, treating clinicians as well as the community at large. ***The aim of the study*** was to assess risk factors for aggressive and violence behavior among schizophrenic patients. ***Descriptive design*** was used to achieve the aim of this study. ***Setting****:* Psychiatric Mental Health Hospital at Benha City, Qaliubiya Governorate which is affiliated to the General Secretariat. ***Subject:*** A convenience sample of 80 patients who were hospitalized at above mentioned setting. ***Tools****:* Structural questionnaire sheet was developed by the researcher and tested for its content validity and reliability that consisted of two tools: tool one was consisted of three parts to assess socio-demographic, clinical characteristics, and the history of aggressive and violence behavior before entering and inside the hospital and tool two to assess risk factors for aggressive and violence behavior among schizophrenic patients. ***Results****:* More than three quarters of studied patients had pervious history of aggressive behavior inside the hospital, verbal aggression was the most common form of aggression inside the hospital, more than quarter of studied patients had high static risk factors of aggression, more than one third of studied patients had high clinical and dynamic risk factors of aggression. The majority of studied patients had moderate risk of staff related factors of aggression and the majority of them had high risk of unit and environmental related factors of aggression. ***Conclusion****:* There were many risk factors can lead to aggressive and violence behavior among schizophrenic patients such as static risk factors, clinical and dynamic risk factors, staff related factors , unit and environmental related factors . ***Recommendations****:* The study recommended that a system for accurate monitoring of inpatients' aggression and violence should be established in the psychiatric hospitals. Maintaining a constructive and therapeutic hospital environment to decrease the potential for aggressive and violence behavior.

Key words: *risk factors, aggression, violence, schizophrenia*

Introduction

Schizophrenia is a chronic and sever brain disorder that affects approximately 1% of both men and women worldwide, compromises different aspects of patients' lives and represent an important burden in financial and social terms, not only for patients but also for their families, caregivers and society as a whole ***(Nicolino et al., 2011)***. It has been found in all societies and geographical areas. Its incidence and prevalence is similar worldwide ***(Tellis, 2008)***. Diagnosis generally occurs in the young adult (or in late adolescence) with the advent of the first frank psychotic episode, often in the wake of a high-risk, prodromal period in which occasional and/or attenuated psychotic symptoms may occur ***(Fusar-Poli et al., 2014; and Sabbag et al., 2011)***.

A potential for violence exists in any health care settings. Studies have shown that the risk is greater in psychiatric mental health care facilities ***(Levin, 2010)***.Acts of aggression committed by patients with schizophrenia is a major public health concern affecting patients, their families, treating clinicians as well as the community at large. Schizophrenic patients show increased risk for committing aggression relative to the general public as well as patients with other psychiatric conditions and aggression is a major contributor to poor schizophrenic outcome ***(Colasanti, et al., 2010; and Serper, 2011)***.The relationship between schizophrenia and violence can be explained partly through socio demographic factors, such as young age, male sex, low socioeconomic status, or unmarried status ***(Douglas et al., 2009)***. Other factors with predictive value include a history of violence, drug or alcohol abuse ***(Van Dorn et al., 2012)***, or being a victim of child abuse ***(Steel et al., 2009)***.

There are many possible causes for aggressive behavior in patients with psychiatric disorders. Probably the most important causes are the presence of co morbid substance abuse, dependence, and intoxication. In addition, the disease process itself may produce hallucinations and delusions, which may provoke aggression. Often, poor impulse control related to psychiatric deficits may facilitate the discharge of aggressive tendencies; finally, underlying personality characteristics such as antisocial personality traits also may influence the use of aggressive acts as a mean to achieve certain goals ***(Volavka & Citrome, 2008)***.

The most significant predictors of violence are a history of violence, psychosis, distractibility, retardation, depression and bizarre behavior ***(Selim, 2006)***. Environmental factors such as overcrowding, lack of ward materials resources, noise, unplanned activity therapy, time of a day and having no privacy have been identified as possible correlates associated with aggressive incidents. In addition, number of staff, staff attitude, educational and experience levels of the staff, communication styles of staff and unempathic limit setting style are associated with increased aggression ***(Keltner et al., 2007)***.

Nurses spend extended periods in direct contact with patients and often have to deal with situations of violence that may imply threat and great feeling of fear, hurt, and helplessness. So that, working with aggressive or violent clients and keeping everyone safe is a great challenge for all nurses ***(Nau et al., 2009)***. Risk assessment to evaluate violence potential may be a crucial first step in predicting and preventing aggressive and assaultive behavior in patients; it should also be an important element of treatment and management considerations. Risk assessment may serve to enhance staff ability to safely manage violent

patients and decrease the likelihood of staff assaults ***(Antonius et al., 2010)***.

Significance of the problem:

Aggression is present in human life like love, sorrow and joy. In nearly every aspect of life, most people are frequently touched by violence from front- page headlines to personal episodes. Violence is a public health problem, direct or indirect and it is a growing problem which people read daily about in the newspaper, see in the pictures and watch in television. This problem is not limited to street but reach into homes and workplaces ***(Nau et al., 2007)***.Aggression committed by individuals with schizophrenia represents a major challenge for mental health professionals and has become a focus of increased attention and research in recent years ***(Wehring &Carpenter, 2011)***.

Prevalence rate of aggressive behavior vary substantially between 10% and 60% of admitted psychiatric patients ***(Ketelsen et al., 2007)***.In Egypt, the prevalence of aggressive behavior of admitted psychiatric patients were 82% represented different forms of aggression, where 32% of them were used physical acts of aggression***(El-Fiky,2016)***. Findings of certain studies indicate that only 10% of homicidal persons were not psychiatrically diagnosed, while 20%were diagnosed with psychotic disorder, and 54% were primarily or secondarily diagnosed with personality disorder .Most studies show that violent crime is around 2-10 times more common among individuals diagnosed with schizophrenia than compared populations ***(Fazel et al., 2009)***.Some studies reported that 24-44% of aggressive acts committed by individuals with schizophrenia occur during an acute phase of the illness ***(Citrome, 2015)***.It has been reported that the incidence of violent behavior is increased 6-8 fold in

male patients with schizophrenia and 8-10 fold in female patients **(*Richard-Devantov, et al., 2009)***.

Therefore, this study aimed to assess risk factors for aggressive and violence behavior among schizophrenic patients in order to determine what are risk factors contribute to aggression and try to control or eliminate them.

Operational definition:

Risk factors of aggression can be operationally defined by risk factor measurement score obtained from risk factors of aggression questionnaire developed and validated by the researcher and banal of expertise.

Aim of the Study

This study aimed to:-

Assess risk factors for aggressive and violence behavior among schizophrenic patients.

Research Question:-

What are risk factors for aggressive and violence behavior among schizophrenic patients?

Part I: overview on Aggression

The definition of violence/aggression:

It is evident from the literature in the area of patient aggression that there are differences in the conceptualization and definition of aggression and associated terms, such as assault and violence ***(Maguire & Ryan, 2007)***.Understanding the concept of anger is helpful to understand the concept of aggression or violence. Anger, a normal human emotion, is a strong, uncomfortable, emotional response to a real or perceived provocation. Anger results when a person is frustrated, hurt, or afraid. Handled appropriately and expressed assertively, anger can be appositive force that helps a person to resolve conflicts, solve problems, and make decisions ***(Koh et al., 2008)***.Although definitions of aggression often differ across disciplines and among various reported studies, aggressive behavior generally includes abusive language, violent threat to harm, physical assault to self or others, and damage to property ***(Acker, 2007)***.

Aggression and violent behaviors are complex phenomena, both defined as behaviors which are threatening or harmful to self, others or property. In literature both terms are used, often as synonyms. There is no uniform definition of aggression or violence ***(Abderhalden et al. 2008)***.Aggression is a forceful behavior, action, or attitude that is expressed physically, verbally, or symbolically. It is manifested by either constructive or destructive acts directed toward oneself or against others ***(Mosby, 2009)***.Aggression can be defined as the behavior characterized by anger, hostile thoughts, words, and actions towards others, manifesting in speech, tone of voice, body language, outward expression of anger or rage, and threatened, actual or physical aggression. The aggression may be directed towards themselves, other patients, and /or the environment (destruction of property) or at others ***(Franz et al. 2010)***.

Violence does not always have anger as it origin, but it does have the discrete intention of doing harm to a specific person or group and "connotes extreme, unjustifiable aggression violating social sanctions and causing destruction to another as is its planned result"***(Victoroff, 2009)***. Violent behavior can occur on a continuum, ranging from threatened assault, to physical abuse, to acts terrorism ***(Kneisl & Trigoboff, 2014)***.Violence is physical aggression at the highest end of the aggression continuum***(Shaver & Mikulincer, 2011)***.Violence is the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community that either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment, or deprivation ***(WHO, 2015)***.Violence connotes greater intensity and destruction than aggression. All violence is aggressive, but not all aggression is violent ***(Boyd& Sandra, 2015)***.

Theories of Aggression and Violence:

A single model or theory cannot fully explain why certain persons behave the way they do. Aggressive behavior is the result of the interaction among different theories and that each of these theories must be considered when planning and determining nursing care ***(Boyd& Sandra, 2015)***.

1) Psychological Theories:

(a)Psychoanalytic Theories:

Psychoanalytic theorists view aggression as a basic drive, **Freud** held that all human behavior stems either directly or indirectly from a life instinct **(Eros).** The energy or libido of **Eros** is directed toward the enhancement or reproduction of life. He initially proposed that aggression is the result of frustrated libido. When people pleasure seeking impulse is blocked, they

experience a "**primordial reaction**" to attack the obstacle. Naturally, egos keep people from assaulting anyone and everyone who spoils their fun. Therefore, Freud argued that people often displace their aggression. Later on, Freud changed his views on the causes of aggression, he proposed the existence of a second major instinct (**Thanatos**), a death force. The energy of **Thanatos** is directed toward the destruction or termination of life ***(Sadock& Sadock, 2005)***.

The energy of **Thanatos** could lead to self-destruction unless it is neutralized by **Eros** or redirected unconsciously through mechanisms such as displacement outward and expressed against others in the form of aggression. Thus aggression stems primarily from the redirection of the self-destructive death instinct away from the self and toward others. the Freudian theory also proposed that one way to minimize accumulation of psychic energy was to drain it off safely through "**catharsis**" which refers to the releasing of inner feelings, urges, tension and drives through less destructive ways as crying, verbalization, physical activities and various symbolic means, it is usually considered a healthy alternative to the direct expression of destructive urges***(Burger, 2008)***.The probability of aggression increases as a function of the amount of stored energy and the presence and strength of aggression-releasing stimuli. Aggression is inevitable and when there is no safe release of the stored energy, spontaneous eruptions can occur ***(Antai-Otong2008*)**.

(b) Behavioral Theories:

According to behaviorists, emotions including anger were learned responses to environmental stimuli. The goal of behaviorists is to predict and control behavior ***(Varcarolis et al., 2006)***.There is ongoing debate about the impact on children of viewing violence as portrayed in television, movies,

music, and video games. Currently, there is vigorous debate about the long term effects of exposure to violent behavior through the media ***(Ferguson et al., 2009)***.Children who witness domestic violence are at risk for developing " intergenerational linkages in antisocial behavior" with numerous subsequent problems, such as depression, anxiety, and violence directed at peers ***(Thornberry et al., 2009)***.Adolescents who are victimized at home have higher rates of delinquency ***(Mrug&Windle, 2010)***.

(c) Cognitive theories:

Cognitive theory described how cognitive schema such as judgments, self-esteem, and expectations drive anger. Individuals' appraise event as threatening and this cognition leads to the emotional and physiological arousal necessary to take action. Although threat is usually understood as an alert to physical danger, perceived assault on areas of personal domain such as values, moral code, and protective rules can also lead to anger, therefore, the arousal of anger is a cognitively mediated process ***(Varcarolis et al., 2006)***.Anger may escalate when the initial appraisal is followed by cognition such as "they have no right to treat me this way, I'm a person too", this cognition lead to escalating anger or violence unless the situation is defused through successful interventions ***(Nezlek, 2008).***Nurses are not immune to anger, the angry clients may be appraised as a potential threat, this appraisal may be lead to anger on the nurse's part, as well as an impulse for self-Protection(***Gilbert& Daffern,2010).***

2- Socio-Cultural Theories:

Social and cultural factors also may influence aggressive behavior. Cultural norms help to define acceptable and unacceptable means of expressing aggressive behavior feelings. Sanctions are applied to violators of the norms through the legal systems. By this means, society controls violent

behavior and attempts to maintain a safe existence of its members. A cultural norm that supports verbally assertive expressions of anger will help people deal with anger in a healthy manner. A norm that reinforces violent behavior will result in physical expression of anger in destructive ways (***Mrug&Windle, 2010).***

Socio-cultural theories focus on social structures, norms, values, institutional organizations, and system's operations to explain individual aggression. According to these models, aggressive or violent acts are a product of cultural values, beliefs, norms and rituals ***(Keltner et al., 2007).*** There are numerous psychosocial variables that influence the development and expression of violent behavior current research is examining the effects of child abuse, emotional rejection in childhood, and parenting styles as precursors to the development of violence ***(Mrug&Windle, 2010).***

Dysfunctional family dynamics and negative factors in the childhood home may contribute to violence. Many violent individuals have had childhood experiences of abuse. It is critical to be culturally sensitive when interacting with clients, especially those demonstrating the potential for violence. Because the expression of aggressive behavior is significantly influenced by culture, there is a potential for discrimination when assessing the onset of violence ***(Thornberry et al., 2009).***

3-Biological theories:

Current research is exploring the biologic basis of aggression. While it is likely that violence may be influenced by many biologic variables- genetic factors, hormonal factors, neurotransmitters, and neurophysiological factors- the exact relationship remains uncertain ***(Kneisl&Trigoboff, 2014)***. Numerous neurological studies have provided an explanation of the role of

genetics and complex biological processes that mediate stress in the etiology of aggression and violence. According to these studies aggression may be influenced by many biological factors: neuroanatomical factors, neurotransmitters, hormonal and genetic factors ***(Antai-Otong, 2008***).

(a)Neuroanatomical theory:

Physiological changes within the brain may result in violent behavior. Trauma and other disturbances that produce anoxia (e.g., cardioresiratory arrest) are likely culprits in the development of aggression in some individuals. For example, some people who experiences brain tumors or cerebral vascular accidents (strokes) demonstrate violent behavior. Metabolic disorders such as sever hypoglycemia, encephalitis, and dementia may also lead to violence ***(Kneisl &Trigoboff, 2014)***.Some researchers reported that the root of the aggressive behavior of certain chronically aggressive persons is organic brain damage. The part of the human brain thought to be involved in aggressive drives is the **"Limbic System"**. The areas of this region thought to be most closely involved in aggression are the **hypothalamus, septal area and the amygdale,** a structure that is located medially deep in the temporal lobes and involved in emotional responsiveness, may be activated by interpersonal trigger ***(Videbeck, 2008)***.

(b) Neurotransmitters:

Neurotransmitters are chemicals that are transmitted to and from neurons across synapses resulting in communication between brain structures. Changes in the balance of these substances can aggravate or inhibit aggression. Generally, cholinergic and catecholaminergic mechanisms seem to be involved in the induction and enhancement of aggression, whereas serotonergic systems and gamma-aminobutyric acid (GABA) seem to inhibit such behavior ***(Vollm et al., 2006)***.

Researchers have examined the role of neurotransmitters in aggression in animals and humans, but they have been unable to identify a single cause. Findings reveal that serotonin plays a major inhibitory role in aggressive behavior; therefore, low serotonin levels may lead to increased aggressive behavior. This finding may be related to the anger attacks seen in some clients with depression. In addition, increased activity of dopamine and norepinephrine in the brain is associated with increased impulsively violent behavior. Further, structural damage to the limbic system and the frontal and temporal lobes of the brain may alter the person's ability to modulate aggression; this can lead to aggressive behavior ***(Siever, 2008)***.

(c)Hormonal factors:

Many hormones including testosterone, progesterone, luteinizing hormone, rennin, B-endorphin, prolactin and melatonin are involved in the mediation of aggressive behavior. Estrogens seem to have different kinds of behavioral effects depending on the context in which they are produced or administered. Estrogens have actually been associated with the development of aggressive behaviors ***(Antai-Otong, 2008)***.There is a proposition that men with high testosterone levels are more aggressive or prone to violence than others ***(Andrew, 2009)***.The most important function of those hormonal substances in the adult human are concerned with reproduction, including the onset of puberty, the menstrual cycle, pregnancy and child birth. Studies' proposition of presence of connection between those hormones and violence may sustained by studies which reported that women with a history of criminal behavior might indeed exhibit premenstrual aggressiveness ***(Siegel, 2009)***.

(d) Genetic factors:

No one gene or variant thereof has yet been identified as the causative factor of aggressive behavior. However, one study indicates that it may be possible to measure the risk of antisocial behaviors, such as aggression, by examining gene X environmental alterations ***(Beaver et al., 2010)***. Another study suggests that violent behavior may be associated with low cholesterol levels due to a specific gene mutation ***(Roaldset et al., 2011)***. Additional research related to the complexity of the genetic contribution to aggressive behavior is needed. Study of the relationship between heredity and violence is continuing at a rapid pace and is focusing on specific molecular genetic markers for aggressiveness. Study of the relationship between heredity and violence is continuing at a rapid pace and is focusing on specific molecular genetic markers for aggressiveness ***(Jasinska& Freimer, 2009)***.

Numerous twin studies, as well as studies of adopted children of criminal biological parents indicated a hereditary component to aggressive behavior. A recent study of a large sample of twin pairs, using parent-reported data found an association between early temperament and later aggression. Temperament is the sum total of a person's constitutional or biological personality dispositions, it is partly genetic evident early in life and somewhat stable across situations and over time ***(Mohr, 2009).***

Classifications of human violence/ aggression:

Aggression can be classified as physical- verbal, active- passive, or direct- indirect. The physical- verbal dimension distinguishes between whether one uses physical means or words to harm another person ***(Rosen & Underwood, 2010)***.Physical aggression is described as physical violence towards other people, like kicking, hitting, scratching, spitting, throwing objects, pinching, biting, pulling hair or strangling or as self harm behavior

where patients may use objects to harm themselves ***(Foster et al., 2007)***.Physical aggression tends to be more dangerous than verbal aggression, and may lead to injuries to the patient him/herself, others and objects, but less frequently and more severity ***(Mohr, 2009)***. Verbal aggressive behavior is described as verbal abuse, like threats of harm, rudeness, or swearing ***(Kisa, 2008; and Stone et al., 2011).*** The active passive dimension refer to the extent to which the aggressor actively engages in a behavior aimed at harming someone , while passive aggression refers to causing harm by not doing something ***(Ramirez & Andreu, 2009).***

Direct forms of aggression include physical assault and various verbal behaviors that may be hostile in content and in tone. These verbal behaviors may appear with or without physical aggressive behavior. In addition, non-verbal aggressive behavior, like threatening body posture or facial expressions, may occur in connection with direct forms of aggression. Indirect aggression consists of actions that involve some kind of social distance between the aggressor and the victim, like gossiping which damages peer relationships. The proceeding of behaviors is often delayed and covert because there is no physical contact. The psychological consequences, however, may be substantial and continue for a long time ***(Berg, 2012).***

Human violence also can be classified through three dimensions "biological, social, and situational dimensions". Physical and verbal aggression were classified in construct named biological dimension of aggression, direct- indirect aggression were classified on construct called social dimension of aggression. Finally, hostile and instrumental aggressions were included in construct called situational dimension of aggression ***(Glenn& Raine, 2009).***

These constructs which called hostile and instrumental aggression, on one hand hostile type is impulsive, uncontrolled, unplanned, reactive, hot-blooded, overt, defensive, affective, destructive type and it may be defined as an act that is primarily intended as ultimate motive to harm another individual. On other hand, instrumental type is premeditated, controlled, planned, proactive, cold –blooded, hidden, offensive, predatory, positive and constructive type and it is conceived as premeditated mean or tool for solving problems or for obtaining a variety of objectives other than harming the victim. Instrumental type is purposeful and goals oriented thus, requiring neither provocation nor anger and the aggressor exhibit normal physiological and psychological status and intact control system in contrast to hostile type ***(Glenn& Raine, 2009).***

The cycle of aggression and violence:

Aggressive behavior can be sudden and unexpected. Studies have demonstrated that assault and aggression occur in a predictable pattern or chain of emotional responses. Each pattern of responses is called a stage or phase, and there are five stages in the cycle. These stages are called trigger, escalation, crisis, recovery and post crisis depression ***(Keltner et al., 2007).***

1-Trigger phase:

During the trigger phase, a stress- producing event or circumstances in the environment initiates the client's responses, such as restlessness, pacing, anger, fear, loud voice, muscle tension, rapid breathing and anxiety. These responses are nonviolent and present no danger to other. The behavior reflects patients 'usual coping and defense mechanisms in attempt to achieve control for most individuals these coping behaviors are appropriate reactions to stress. For persons who are aggressive, their abilities to solve problems or

choose effective options decrease as aggressive responses increase. Approaching the client in anon-threatening, calm manner in order to de-escalate the client's emotion and behavior is very successful in this stage ***(Keltner et al., 2007; and Videbeck, 2008).***

2- Escalation phase:

The escalation phase is the building stage during which the client's responses represent escalating behaviors that indicate movement toward a total loss of control, such as pale or flushed face, swearing, screaming, agitation, threatening gestures, demanding, clenched fists, hostility and loss of reasoning ability, attempts to use aggressive behaviors to gain control are repeatedly ineffective, resulting in frustration and greater anger. These emotions further flame the fire of aggression intervention is crucial at this stage if violence is to be prevented stage ***(Keltner et al., 2007; and Videbeck, 2008).***

3- Crisis phase:

During a period of emotional and physical crisis, the potential for danger is increased. This phase is a period of emotional or physical blow out during which the actual assaultive behaviors occur, many individuals act out, physically harm other people and animals or destroy property. Others become verbally abusive or scream and shout, people in this stage of the aggression cycle are unable to listen, to reason, follow direction or engage in mental exercises. They are so controlled by their emotional responses, they cannot respond to most outside stimuli. The best interventions at this stage are to protect the individual and others in the environment from physical harm ***(Videbeck, 2008).***

4- Recovery phase:

The recovery stage is the cooling down period that follows an emotional explosion during which people regain physical and emotional control. The individual slowly calms and returns to normal behavioral responses and actions, demonstrate lowering of voice, decreased muscle tension and physical relaxation. Interventions during this phase include assessing for injuries or trauma and providing a safe, quite environment in which the person can recover ***(Keltner et al., 2007*)**.

5- Post crisis phase:

The last phase of aggression cycle involve a period of guilt, the client attempts reconciliation with others and returns to the level of functioning before the aggressive incident and its antecedents. Aggressors are aware of the assault and genuinely feel bad about it. They may provide loving care for the person who was assaulted or spend large amounts of money on gifts or other offerings of forgiveness. With the passage of time, the assaultive event is slowly placed in the past. Life returns to normal that is until the next trigger is cocked, and cycle repeated itself over and over again ***(Keltner et al., 2007; and Videbeck, 2008).***

Effects of violence on (victims):

The first consequence that comes to mind following a violent act is the physical damage inflicted to the victim. Depending on the particulars and severity of the assault it can mean physical trauma or psychological trauma or both. This, in turn, can lead to hospitalization of the victim followed by sick leave, therapy and even inability to work. The costs to society and the economy are difficult to calculate accurately. Staff replacement costs, treatment costs, and compensation claims are just a few examples.

Aggression towards nurses has negative consequences to the victim, assailant and society ***(Cojoc& Ngui, 2011)***.

All persons experiencing violence may suffer from injuries, some of them life-altering, as well as somatic complaints such as asthma, arthritis, dizziness, gastrointestinal (GI) disturbances, headache, and earlier onset of multiple chronic diseases. Psychiatric symptoms includes anxiety, depression, difficulty concentrating, and symptoms of PTSD including hypervigilence, sleep disturbance, appetite disturbance, social withdrawal ,difficulty trusting others, fear of future assault, and a greater likelihood of future substance abuse ***(Scott et al ., 2011).***

-Staff in the hospital:

On any psychiatric ward a proportion of the staff time is taken up with protecting service users from each other via the identification and protection of the vulnerable, general supervision of the environment, and rapid response to any noise or cry for help, among other strategies. In addition, service users may also become involved in trying to defuse and deal with violence and aggression between service users, and between service users and staff. A proportion of the injuries that occur in staff happen during the breaking up of fights between service users, for example, but staff may also be assaulted unpredictably as service users respond to the symptoms they experience, or as a consequence of confrontations about leaving the ward, medical treatment or other issues ***(Nicholls et al., 2009).***

Staff also has to physically intervene to stop service users injuring themselves or trying to leave the ward, sometimes eliciting an aggressive response. Most assaults and aggression against staff – and by service users on other service users – are thankfully minor, but they can occasionally be severe. Every year several hundred injuries on staff are officially reported to

the Health and Safety Executive by psychiatric hospitals as resulting in periods of sickness lasting or more days. As a consequence of physical and/or psychological injuries, staff may leave psychiatry to work elsewhere. Verbal aggression to staff is extremely common and takes the form of abuse, shouting, threats, racism and generalized anger ***(Stewart & Bowers, 2013)***. Verbal aggression can have a profound psychological impact ***(Stone et al., 2011)***, affect performance and functioning and is the particular form of aggression that is associated with low staff morale ***(Bowers et al., 2009; and Sprigg et al., 2007)***.

- Nurses consequences:

Because nurses have extended contact with patients during highly stressful circumstances, there is always the risk that they may be the recipients of patient aggression. Nurses and nurses' aids are the targets of patient violence more often than any other health care professionals and psychiatric nurses report higher rates of assault than nurses in other specialties ***(Janocha& Smith, 2010; and Hartley&Ridenour, 2011).***Assaults on nurses by patients can have both immediate and long term consequences. Reported assaults range from verbal abuse or threats and minor altercations to sever injuries, rape, and murder. Any assault can produce sever sequelae for the victim, including PTSD ***(Jacobowitz, 2013).***

After a violent incident, nurses struggle with their inclination to avoid the patient, and they watch for any signs of patient remorse; their response differs if the violent behavior was attributable to psychosis versus manipulative or volitional acting out ***(Zuzelo et al., 2012).*** Because of their role as caregivers, nurses may suppress the normal range of feelings after an assault, believing that it is wrong to experience strong feelings of anger and fear in this situation.

-Personal consequences:

Violent behavior associated with a mental health problem is a criterion for admission to hospital, compulsory admission, transfer or admission into more secure settings such as psychiatric intensive care or forensic services, and the use of severe containment methods such as manual restraint, rapid tranquillization and seclusion. All things being equal, the violent service user will therefore experience more frequent admissions, more compulsory admissions, to greater security settings, for longer lengths of stay, with more restrictions on their liberty, greater coercion and higher doses of medication. Violent behavior is therefore problematic for the person concerned and may have a negative impact on their quality of life ***(The British Psychological Society & the Royal College of Psychiatrists, 2014).***

-Relatives, careers and social networks:

Where the risk of violence does exist, it is family members, careers and those in close contact with the individual concerned who are most likely to be injured. Major injuries and deaths are rare, but the number of minor assaults is unknown as they may never be reported to the police or to anyone else. Living with a potentially violent person can lead to the family member or career becoming severely stressed or developing a mental health problem. Alternatively, if the person concerned is living independently, relatives may withdraw, cease support or stop visiting if they are regularly faced with abusive and aggressive behavior ***(The British Psychological Society & the Royal College of Psychiatrists, 2014).***

-Other service users:

People who share a ward with a potentially violent service user are also at risk of physical and psychological harm. Most aggression is directed at staff that are in positions of power, control access to desirable resources,

discharge from the ward and who may impose unwanted treatment. However, living in close proximity with others whose violence is unpredictable coupled with the service user's own psychiatric symptoms does place them at risk. Very occasionally that risk is severe and deaths have been reported. Minor assaults and injuries are regrettably more common, and approximately 20% of violent incidents on psychiatric wards are between service users ***(Foster et al., 2007)***.

Part II: Risk factors for aggression and violence

There are several risk factors that have been identified by the researchers which lead to aggressive behavior and violence in patients with schizophrenia. These risk factors that have been identified can be classified into: factors related to patients (static, clinical and dynamic risk factors), factors related to staff, factors related to the unit and environment of the hospital and other unclassified risk factors. These factors are explained in details as following:

1-Patient related factors:

(a) Static risk factors:

A static risk factor is defined as a patient characteristic that cannot be changed with clinical intervention. This includes demographic information, psychiatric diagnoses, and prior history. The most consistently affirmed static variable associated with the prediction of future violence is a history of past violence. The risk of future violence increases linearly with the number of past violent events. A history of impulsivity is also related to the potential for violence. Other specific static risk factors include male gender, young adulthood, history of head trauma or neurological impairment, childhood maltreatment and diagnoses of major mental illness.Poor work adjustment can be an additional static risk factor in a patient's social history; other static variables include a dysfunctional family of origin and a history of abuse as a child ***(Rueve& Welton, 2008; and Volavka, 2014).***

-Demographic factors:

Many studies investigating the role of socio demographic risk factors for violence in general psychiatric populations ***(Amore et al., 2008)*** and in

patients with schizophrenia reveal that violence is associated with economic deprivation, social living status (e.g., living with others rather than living alone), age where younger individuals are more likely to commit violent, and gender where men are more likely than women to engage in violence ***(Swanson et al., 2008; and Van Dorn et al., 2008)***. When compared to age, gender and socioeconomic matched populations, patients with schizophrenia engage in violence earlier and significantly more often than individuals without schizophrenia. These trends are also evident among women.

Past violent behavior alone appears to be the best demographic predictor, the predictive validity of past violent behavior increases with frequency and seriousness of recent violent behaviors .The age of the first serious aggressive behavior was also found to be significant factor, commitment of serious violent act at earlier age is inversely correlated with future risk and the number of violent offences is positively correlated with future violent episodes ***(Turgut et al., 2006).*** Other socio-demographic variables correlates of violence include low socio-economic status, single or divorced, unemployment, illiteracy and informal education as read and write ***(Antai-Otong, 2008).***

-Psychiatric diagnosis:

Psychiatric diagnosis has often been correlated with aggression and violence across life span ***(Fazel & Grann, 2006; and Swanson et al., 2006).***However, using diagnosis as a predictor of violence presents some problems. First, many patients may have more than one diagnosis, as a schizophrenic patient may also have a personality disorder, an underlying organic brain disorder or intellectual impairment. Second, patients may have different clinical symptoms depending on the severity and acuity of their illness. In that sense, diagnosis may be useful only if the stage of the illness

is specified ***(Stuart & laraia, 2005).***Patients with dementia, alcohol or drug intoxication and other deteriorative disease of the brain, as brain tumor may also reveal aggressive behavior ***(Botez et al., 2007; and Villano et al., 2009).***

Several studies have shown that personality abnormalities, including personality pathology, are detectable among schizophrenic patients, present before the onset of the illness, remain relatively stable after illness onset, and affects behavioral outcome. Although only few individuals with schizophrenia, among the segment of offenders qualify as psychopaths, a range of studies converge on the conclusion that psychopathy is an essential predictor of future violence in schizophrenia ***(Newton-Howes et al., 2008; Fullam & Dolan, 2008).***Researchers studying the role of co-morbid personality pathology in schizophrenia have also suggested that personality disorders (PD) affect not only the course and treatment of schizophrenia, but also behavioral outcomes such as aggression and violence ***(Moore et al., 2012; and Newton- Howes et al., 2008)***.Other studies have also found that personality pathology is an important factor for explaining aggression in schizophrenia ***(Bo et al., 2011).***

-History of head trauma:

There are a number of explanations of the causal relationship between head injury and violence. The most common assumes that head injury has a direct unitary effect of a biological or social nature on violent behavior ***(Dianna& Lennings, 2007).*** While brain injury led to an increase in violence overall, it did not do so in every case ***(Charles & Lashley, 2014)***. The link between a head injury and later violence was stronger when a head injury was more recent, even after controlling for other factors including previous violent behavior. Long-term impact of head injury can include

changes in cognition, language and emotion, including irritability, impulsiveness and violence ***(Nauert, 2015)***.

- Child abuse and maltreatment:

A history of childhood physical abuse was one of the factors associated with the occurrence of incidents of assaultive behavior among patients was diagnosed with schizophrenia. The evidence for that association in schizophrenia is more tentative, although individuals with schizophrenia report more childhood adversities than controls. Some evidence in general population indicating a relationship between childhood maltreatment and violent behavior in adulthood, there are data indicating that this relationship also exists in psychotic patients. Maltreated as a child increases risk for delinquency, adult criminal behavior, and violent criminal behavior ***(Volavka, 2014).***

(b) Dynamic risk factors:

Dynamic risk factors are variables in a patient's presentation that can potentially be improved with clinical intervention. The most frequently reported dynamic risk factor is substance abuse or dependence. Other important dynamic risk factors include persecutory delusions, command hallucinations, lack of insight, treatment non adherence, impulsivity, homicidality, depression, hopelessness, suicidality and mentalizing abilities ***(Rueve & Welton, 2008; and Douglas et al., 2009).***

- Substance abuse:

The general association of substance abuse with violence has been well documented, and numerous studies report that substance abuse plays a major role in the occurrence of violence among patients with schizophrenia ***(Elbogen & Johnson, 2009)***. This association is presumed to be precipitated

by the high prevalence of comorbid substance abuse among patients with schizophrenia, where rates ranging from 20 to 50% have been found in both general and forensic. Indeed, high prevalence of violence in patients with comorbid substance abuse and schizophrenia has been reported across various epidemiological as well as longitudinal prospective studies ***(Fazel, et al., 2009).***

The relationship between alcohol and aggression or violence has been proven to be a fact by scientists and researchers. This is because alcohol diminishes brain mechanisms that control impulsive behavior. Alcohol also reduces the thought patterns of an individual, which in turn may lead to misperceived social clues, and overreaction to perceived threats. The aggressive behavior of an alcohol user is usually revealed when the person is under the influence of alcohol or if the individual is suffering from alcohol withdrawal or alcohol delirium ***(Saatcioglu & Erim 2009).***

Sedatives are drugs that are used to alleviate symptoms of insomnia and anxiety. When sedatives are used in high doses they cause a user to have "paradoxical effects". These effects are characterized by aggression and violent behaviors ***(Kipping, 2007).*** Sedative intoxication has similar effects to those of alcohol intoxication. It may lead to mood fluctuations causing the patient to become irritable and anxious. Like alcohol intoxication the patient may have poor judgment, therefore increasing the risk of aggressive behaviour.Cocaine has a great association with violence due to its rapid onset and offset of effects, which are said to bring out higher levels of irritability and aggression ***(Cojoc& Ngui, 2011).***

- Psychoses and psychotic symptoms:

The preponderance of studies discussing the role of psychoses and psychotic symptoms in the occurrence of violence, point out that there is a

significant positive correlation between psychoses/psychotic symptoms and violence among individuals with schizophrenia ***(Amore et al., 2008).*** This association between violence and psychoses appears most prominent during first-episode psychosis, compared to later stages of the illness ***(Foley et al., 2007; and Nielssen, 2009).***There is considerable evidence suggesting that the relation between symptomatology, violence and schizophrenia is not random, but motivated and directed by specific constellations of psychotic symptoms, which primarily belong to the class of positive symptoms ***(Hodgins et al., 2008)***. Delusional symptoms such as persecutory ideations, persecutory delusions in combination with emotional distress, threat/control-override symptoms (TCO), command hallucinations and hallucinations of threatening content have all been found to be significant predictors of violence and aggression among patients with schizophrenia ***(Bo et al., 2011).***

Delusions are considered by many clinicians to be important causative factors for violent behavior during acute states of psychosis and are frequently given as explanations for violence by patients. Although early studies supported the notion that violence can be driven by symptoms of psychosis, including delusions, threat/control override, and command hallucinations, others have failed to confirm these associations. Other factors associated with psychotic symptoms may also be relevant, including affect. Earlier studies demonstrated that persecutory delusions were marked by negative affect and propensity to act, and that patient who acted violently were more likely to report that delusions made them angry ***(Jeremy, 2013)***.

Hallucinations especially visual and auditory are more common in psychotic patients who commit aggression. Auditory hallucinations found to be associated with aggression are command and commenting hallucinations. The patients themselves stated that commenting hallucinations in the form of voices commenting continuously and negatively on their behaviors provoked

them. Patients are urged to respond particularly when hallucinations generated negative feeling such as anger, anxiety and fear ***(Selim, 2006; and Smith et al., 2006).***

In addition, positive symptoms are provocative for the patients themselves. Patients may describe their symptoms as consuming, disturbing, frustrating, provocative and over controlling them. Patients were admitted for controlling their aggression and for control their exacerbating symptoms that usually coexist with aggressive behavior. Positive symptoms are also provocative to the patients' surrounding, others witnessing these symptoms may comment, laugh at and or misinterpret them, triggering that patients' aggression in response. The negative symptoms (blunted affect, motor retardation and emotional withdrawal) were found to be more prevalent among non-aggressive patients, this may be due to the fact that motor retardation, and emotional withdrawal and blunted affect block the patients' initiation to engage in aggressive behavior ***(Goldberg et al., 2007).***

-Lack of insight:

Approximately 50% to 60% of all patients with schizophrenia deny being mentally ill. Insight into the presence of the disorder is important as it has been shown to be associated with treatment compliance and psychosocial functioning. It has also been hypothesized that lack of insight might contribute to criminal offending by persons with schizophrenia, who have a 2 to5 times higher risk for engaging in aggressive behavior than the general population. However, studies on the association between low insight and aggressive behavior have been few and the results are inconclusive. There only five studies found a positive relationship between lack of insight and aggressive behavior ***(Lincoln & Hodgins, 2008)***.

- Nonadherence to treatment:

Nonadherence to antipsychotic medication treatment is a major problem in treating schizophrenia. Less than 50% of schizophrenia patients are adherent to their medication. Nonadherence has been associated with symptom worsening, including aggressive behavior. Comorbidity of alcohol or other drug abuse with poor adherence to medication further elevates the risk of violent behavior among persons with severe mental illness ***(Volavka, 2014)***.

Disentangling the effects of substance use and nonadherence on relapse (and aggressive behavior secondary to subsequent psychotic symptoms) can be challenging because both substance use and nonadherence are robust risk factors for hospitalization. Inadequate insight into mental illness is a strong predictor on nonadherence, and this is a potential mechanism through which it may increase the risk of violence in schizophrenia. Medication adverse effects such as parkinsonism, weight gain, and loss of libido are well known to reduce adherence ***(Velligan et al., 2009)***. While it is clear that non-adherence to medication elevates the risk for violence, hostility also appears to contribute to the development of non-adherence in patients with schizophrenia or schizoaffective disorder ***(Lindenmayer et al., 2009).***

- Mentalizing abilities:

The ability to represent and attribute mental states to one self and others is often referred to as 'metacognition' or 'mentalizing'. Self versus other mental states and cognitive (i.e., reasoning about knowledge and beliefs) versus affective (i.e., reasoning about emotions) are considered semi-independent components supported by distinct yet overlapping neurobiological underpinnings ***(Abu-Akel & Shamay-Tsoory,2013)***and will

serve as the cornerstones of our metacognitive framework to understanding aggression and violence in schizophrenia. Together, these components are considered necessary for adequate inter and intra relational attunement, including affect regulation and impulsive control ***(Bateman & Fonagy, 2012).***

Difficulties with mental state attribution and mental state reasoning of others can interfere with recognition of important information inherent in human interactions ***(Bora et al., 2009a)***. Furthermore, impairments in metacognitive abilities could lead to grave difficulties in the representation and construction of complex ideas as well as forming specific theories of the internal states of self and others. These abilities (or the lack thereof) have direct consequences on how people solve interpersonal issues confronted with in daily life and thus could impact one's propensity to engage in acts of violence and aggression ***(Kean, 2009)***. Specifically, being unable to understand the mind of others, such as their intentional states, may lead to misunderstandings and in some cases, the erroneous perceptions of these intentions as threatening or hostile, potentially leading the individual to respond violently ***(Salvatore et al., 2012).***

2-Environmental related factors:

The hospital environment may increase stress factors for some individuals, and various situations like limited access to family and friends due to strict hospital policies, rigid hospital routines and limited facilities like internet, may cause the person to be irritated and anxious hence being in the risk criteria of aggressive behavior. The patient may also feel that he/she has no autonomy of their care or they do not know or understand the diagnostic testing that may be taking place. This, in turn, may cause the patient to want to "fight back ***(Cojoc& Ngui, 2011)***.

The existing research in this area suggested that, there are a specific factors in hospital environment that can affect the behaviors of patients such as day of the week, time of day, hospital shift, patient/nurse ratio, space density, mode of admission, length of hospital's stay, low morality and attitudes of staff and their ways of management ***(Daffern et al., 2007; and Bowers et al., 2009)***. Some departments of the hospital like may have some features like: long waiting time, noise, limited privacy and increased activity which can be irritating to the patient making them be more at risk of snapping out and acting out in aggression ***(Wand & Coulson, 2006).***

An excessive stimuli and noise played an important role in the arousal of aggression, noise accompanied over half of the aggressive incidents. Noise created by the staff loud voices directed to each other or directed to the patients when calling or ordering them. Noise also resulted from fellow patients' fights or fellow patients' loud hallucinations and fellow patients singing in groups**.** Lack of ward material resources for energy draining activities such as exercise equipment and sport areas result in increased incidence of aggression. It was found that fights among patients occur around items that require sharing ***(Antai-Otong*, *2008)***.

Lack of freedom for patients to do what they want is recognized as being conductive to aggressive behavior. Aggression is higher in locked wards when compared to the non-locked wards. Locked wards certainly limit the patients' freedom in moving inside the hospital, as well as an overly controlled environment, such as excessive or unfair restriction of rights and privileges might lead to aggression and rebellion ***(Huckshorn, 2010).*** The lack of structured and unstructured diversionary activities such as movies, games, cards, calming music, television and recreational activities might lead to disruptive behavior ***(Keltner et al., 2007***).

Violent television shows activate an aggressive cognition and making it more likely for people to act on previous aggressive thoughts toward others ***(Bartels et al., 2007).***Television, video and movie violence glorifies violence and teaches people how to aggress. It also portrays coercive behavior that result in the attainment of material rewards, social recognition or successful retaliation against enemies. Aggressive sports and war also may lead to imitation of aggressive behaviors ***(Mohr, 2009).***

3-Staff related factors:

In some aggressive incidents, staff can be the direct or indirect precipitating factor in those incidents and many assaultive patients view their victim as provoking the attack, this is an important issue for staff to consider**.** A primary factor of provocation is that of limit setting, violence is a common response to limit setting. Failing to set effective limits may lead to provocation and aggression. There is also increased risk of aggression when limits are set inconsistently, setting too many limits and not setting enough limits ***(Ferns, 2007; and Health Care Commission, 2007).***

There seems to be an agreement that staff attitudes can trigger patients' violence as disrespect, off handedness, inhumanity, harshness, intolerance, rigidity, controlling, superiority and authoritativeness ***(Chapman et al ., 2009)***.Such attitudes are often communicated through tone of voice and physical language ***(Franz et al., 2010)***. Fewer interactions between staff and patients are another important needs, forcing patients to take medications, go to bed, transfer to another ward, change medication, taking things away from patients such as food or cigarettes, unequal distributions of favors and staff attention ***(Michelle et al., 2010)***.Staff behavior and attitude that can contribute to frustration and aggression include rules that prevent clients from leaving activities, power disputes over

medication, blocked access to phones, television or rooms, denials of requests in general, physical restraint and seclusion, ignoring and neglecting clients, not listening to the clients and ordering clients to do or not to do something ***(Wahba, 2010)***.

Interaction between patients and staff members can lead to and maintain aggressive behavior. If interpersonal relationships are fraught then this factor may influence patients' aggressive and violent behavior ***(Camerino et al., 2008).*** The manner in which staff speaks to patients may be an influential factor .Contradictions among nursing staff, the imposition of strict regimes, and the perception that staff are not listening or understanding patients' concerns affect patient behavior. The staff who had been assaulted more than once commonly had been assaulted by the same patient, which suggests a problematic relationship between the staff and patient rather than simply a 'difficult to manage' patient ***(Dickens et al., 2013).***

Other risk factors:

A recent systematic review of aggression in psychiatric wards found that a longer period of hospitalization, involuntary admission and if the aggressor and victim were of the same gender the factors most frequently involved were incidents of aggression ***(Cornaggia et al., 2011).***

-Involuntary admission:

The association between involuntary admission and violence is also likely to be complex. First, evidence that a person is a danger to themselves or to others is a requirement for involuntary admission in many jurisdictions, creating a high threshold for treatment and, in effect, selecting an act of violence. Moreover, the process of involuntary admission and detention in a

locked ward can amplify the patient's hostility and propensity to violence, especially if they do not recognize the need for treatment ***(Large et al., 2008).***

-Hospitalization:

Hospitalization itself might escalate patients' anger, anxiety and symptoms. Hospitalization inevitably introduces new situational stress on the patients, especially if it is not a voluntary admission ***(Keltner et al., 2007).*** Patients who had a long stay displayed more aggression in comparison to patients who had a short stay. One possible explanation for the strong association between violent incidents and a prolonged hospital stay is that the longer the patients were in the hospital, the more time they had to commit violent acts ***(Raja & Azzoni, 2005).***

Nutrition and aggression:

Some studies, however, suggest that diet and nutritional factors may play a role as a risk factor in developing abnormal behaviors such as violence and aggression. These include nutritional deficiencies as well as toxicities. Furthermore, exposure to certain chemicals in the environment may also affect one's brain function and behavior. Although there are not many studies that provide evidence on the role of nutrition in behavior, some studies suggest that aggressive behaviors improve with nutritional manipulation. Psychiatric symptoms such as overaggressive behaviors have been linked to deficiencies in certain essential ***(Journal of Orthomolecular Medicine, 2015)***.

Some studies have demonstrated that taking health supplements, including multivitamins and minerals help improve mood and mental function. On the other hand, some studies also show that supplementation

with lithium, which not an essential nutrient, helps improve symptoms of bipolar depression, which may be associated with aggressive behaviors. Other dietary factors possibly linked to overaggressive behaviors include reactive hypoglycemia (low blood sugar levels) and food sensitivities. Exposure to the toxic effects of cadmium, aluminum, and lead has also been implicated, and some studies show that treatments that remove these metals from the brain help reduce overaggressive behaviors ***(Journal of Orthomolecular Medicine, 2015)***.

Part III: Role of nurse in management of aggression

Management of aggression and violence:

A range of various methods and strategies to deal with and manage patient aggression is available to staff. The choice of particular methods they adopt can be related to their attitudes and beliefs regarding patient aggression including their perception and understanding the causes of aggressive behavior. Generally, approaches to deal with the problem of patient aggression may be split into two groups. The traditional restrictive approach is oriented to control and dominate the aggressive patient. Management of patient aggression in this approach is referred to as being reactive, that is, interventions are implemented as a response to the presentation of patient aggression. Physical methods are used, such as tranquillizing medications, control and restraint techniques (the use of limb restraints, or physical predominance), and seclusion ***(Pulsford et al., 2013).***

The traditional approach is underpinned by the biomedical way of understanding patient aggression, which, in terms of causative and underlying factors of aggression, particularly emphasizes the internal characteristics and individual patient variables, such as psychopathological changes. On the other hand, an interpersonal approach to aggression management is focused on the use of non-restrictive interventions, not only in a reactive way but also as preventive measures at the time when the patient is not aggressive. This approach stresses non-physical methods and strategies of dealing with patients' aggressive behavior, such as effective communication, anger management, and de-escalation by verbal and nonverbal techniques ***(Pulsford et al., 2013).***

Pharmacological treatment:

Psychopharmacology is the mainstay of current treatments for aggression in people with schizophrenia in the community. Treatments are typically not for anger per se, but for acute agitation and aggression. The first-generation (typical) antipsychotics, usually haloperidol with adjunctive lorazepam, continue to be used for acute agitation in emergency departments despite their extra pyramidal side effects (e.g., akathesia and acute dystonia) ***(Buckley et al., 2011)***. The second-generation (atypical) antipsychotics, usually ziprasidone, olanzapine and aripiprazole, are also used for the same purpose, but have a lower risk for the extra pyramidal side effects associated with the older antipsychotics ***(Citrome ,2007).*** For aggressive behavior itself, the treatment of choice appears to be clozapine followed by the commonly used atypical antipsychotics, such as risperidone, olanzapine, quetiapine, and ziprasidone ***(Buchanan et al., 2010).***

Nursing intervention for Managing aggression and violence:

The nurse can implement a variety of interventions to prevent and manage aggressive behavior. These intervention ranges from preventive strategies such as self-awareness and teaching patient anger management and coping skills to anticipatory strategies such as verbal and non-verbal communication, behavioral interventions and pharmacological intervention. If the patient's aggressive behavior escalates despite these interventions, the nurse may need to implement containment strategies such as seclusion and restraints ***(Rintoul et al., 2009; Calvete&Orue, 2010; and Daffern&Gilbert, 2010).***

(1) Preventive strategies:

Preventing aggressive attacks is a combined effort from both the administration and personal effort from the individual i.e. nurse or student ***(Irwin, 2006).*** One of the key preventative measures against aggression is the knowledge of known risk factors of violence and aggression ***(Sands, 2007).***

A- Self -awareness:

The most valuable resource of a nurse is the ability to use one's self to help other. Working with psychiatric patients who might act out requires nurses to be aware of their own aggressive impulses, the way in which, they deal with their anger and the methods they use to channel their anger into constructive and productive actions. If the nurse is tired, anxious, angry or apathetic, it will be difficult to convey an interest in the concerns and fears of the patient. If the nurse is overwhelmed with personal or work problems, the energy available for patients is greatly reduced ***(Keltner et al., 2007*)**.

The nurse must be aware of how he or she deals with anger before helping clients to do so. The nurse who is afraid of angry feelings may avoid client's anger, which allows that client's behavior to escalate, if the nurse's response is angry, the situation will escalate into a power struggle and the nurse will lose the opportunity to" talk down" the client's anger ***(Cahill, 2008).***When verbal techniques fail to defuse a client's anger and the client becomes aggressive, the nurse may feel frustrated or angry, as if he or she failed. The client's aggressive behavior does not necessarily reflect the nurse's skills and abilities. Some clients have a limited capacity to control their aggressive behaviors and the nurse can help them to learn alternative ways to handle angry or aggressive impulses ***(Cahill, 2008; and Nau et al., 2009).***

The nurses should identify how they handle angry feelings, assess the use of assertive communication and conflict resolution then increasing the skills in dealing with their angry feelings will be helpful to work more effectively with clients. Nurses should perceive the patient aggression as a way of communication or expression of suffering rather than away of destruction and hurting ***(Goossens et al., 2008)***.in addition the nurse should teach the patient how to recognize his angry feelings once it appear and try to be aware of the factors that can escalate these feelings through using several methods of intervention as it will be discussed ***(Jonker, 2008).***

B-Teaching Anger Management and Coping Skills:

Anger is common emotion that leads to aggression and violence, teaching patients about communication and appropriate way to express anger can be one of the most successful interventions in preventing aggressive behavior. Many patients have difficulty identifying their feelings, needs and desires and even more difficulty communicating these to others. Thus, teaching health anger management skills is an important area of nursing intervention. Teaching patients that feelings are not right or wrong or good or bad can allow them to explore feelings that may have been bottled up, ignored, or repressed ***(Son & Choi, 2010).*** Patients also can learn to control anger by recognizing what triggers their anger, how behaviors contribute to volatile situations and how self-talk can either help or hinder adaptive coping ***(Wahba, 2010).***

Providing patients with available choices in managing anger may is effective in reducing more restrictive interventions such as positive self take, physical exercise, change of environment, write about feelings, think of the consequences, listen to music, watch TV, deep breathing, count to 50, relaxation exercises, talk about feelings, use adaptive coping skills, read,

being alone, use medication ***(Barbara et al., 2007).*** In addition the nurse can design a plan which include, help the patient to identify his anger, give permission of angry feeling, practice the expression of anger, apply the expression of anger to areal situation, identify alternative ways to express anger, and confrontation with person who is source of anger ***(Stuart, 2013*)*.***

c- Assertiveness training:

Many studies stressed the importance of assertive training in reducing anger and avoiding aggressive behaviors. Assertiveness is considered as an important feature to manage violence that results from inability to communicate feelings. A strategy for improving the ability to communicate assertively would include facilitating one's ability to communicate directly with other people, say no to unreasonable requests, state one's complaint and express appreciation as appropriate ***(Tavakolia et al., 2009; and Rezan et al., 2009)***.If persons feels unable to communicate directly with another they may bottle feelings up, which spill over in to subsequent interactions, this can lead to a build up of tension that can become explosive ***(Betty&Dagmar,2008).***

Assertiveness training also important for nurses for appropriate dealing with patients and colleagues and teaching them to appropriately respond to others. Many different assertiveness training models exist. Most assertiveness manuals discuss how to (a) appropriately respond to another person's anger by distancing oneself from people who are potentially violent. (b) Understand and channel anger appropriately, and (c) Assert oneself when verbally attacked. Assertiveness includes responding as one adult human being to another, listening to what angry people are saying, and clarifying their meani ng as a way to make relational interpretations without being intimidated ***(Bankole& Dauda, 2009; and Rezan et al., 2009).***

(2) Anticipatory strategies:

A- Verbal and Non-Verbal communication:

The psychiatric nurse often can prevent a crisis with early verbal and non-verbal intervention. This is sometimes called" talking the patient down". Because it is much less dangerous to prevent a crisis than to respond to one, every effort should be made to carefully monitor patients who are at risk for violent behavior and intervene at the first possible sign of increasing agitation or verbal aggression ***(Finfgeld-Connett, 2009).*** Simply speaking in a therapeutic manner can help defuse anger and foster insight for patients conversely, engaging in power struggles by subtly or overtly to establish authority can escalate aggression ***(National Executive Training Institute, 2007).***

The nurse should approach the patient in a nonthreatening, calm manner in order to de-escalate the patient's emotion and behavior. Using of clear, simple and short statements is helpful. Speaking in a calm, normal, non provocative and nonjudgmental tone can help decrease a patient's agitation. Added to that, the nurse should be alert to verbal and non-verbal behavior that indicates the feelings of patients and avoid laughing or smiling inappropriately ***(Marder, 2006; and Varcarolis et al., 2006).***

Verbal intervention can escalate aggression when a nurse and patient are strangers or if they have had previous unpleasant interactions involving another person who knows and has a relationship with the patient can be a key. Five important steps in communicating with patients to prevent the escalation of aggressive behavior include;1) making personal contact; 2) discovering the source of distress;3) relieving the distress ;4) keeping

everyone safe and 5) assisting with alternative behaviors and problem-solving ***(Wahba, 2010).***

B- Behavioral intervention:

A key expectation in mental health treatment settings is that patients will act or behave in socially appropriate ways. Behavioral interventions are designed to assist the patient to behave differently. Behavioral interventions include assigning behavioral tasks, interrupting patterns and providing the patient with choices. Another effective behavioral intervention is the implementation of a "token economy". This intervention involves identifying positive interpersonal and self-care behaviors that providers can reinforce by dispensing a predetermined number of tokens to patients, contingent on improvements in their behavior ***(Mohr, 2009)***.

-Talking the patient down:

The clinician talks the patient down by active listening and overdosing him with agreement, i.e, for the moment every effort is made to agree with patient literally to overdose the patient with agreement. The next point, not to argue with the patient. At this point doesn't matter what is right, what the law is whether medications are good or bad, or whether the nurses or others are honorable, what matters is the clinicians deescalating the patient ***(Nau et al., 2009).***

-Limit setting:

To control the risk of violent behavior the nurse may find it necessary to use limit setting as a way to contain dangerous behaviors. Limit setting is the non punitive, non manipulative act in which someone is told what behavior is acceptable, what is not acceptable and the consequences of behaving unacceptably. Once a limit has been set all staff must consistently

reinforce it. If the limit is broken, then the consequences identified must take place. Often, when limits are set, the person will test them frequently to see whether staff is prepared to act. This requires that frequently are completely consistent in their responses, which will improve the possibility of this intervention working to decrease the undesirable behavior ***(Abd EL-Rahman, 2011)***

C-Environmental interventions:

The inpatient environment can be modified proactively to decrease the potential of aggressive and violent behaviors ***(Boyd& Sandra, 2015)***. The first step that can be taken towards the prevention of escalation of aggressive behavior is familiarization with the physical environment where the interaction takes place. This type of knowledge helps when in need of an escape route, or when you need to guide the restless client to a more secluded quiet area, or just because elements in the environment can be triggers for aggression ***(Ferns, 2007)* .**

The hospital environment is composed of many features that, when not properly controlled, may lead to patient irritability and the risk of aggression ***(Sookoo, 2007)***.Healthcare facilities should have a central air-conditioning system which will control temperature and humidity. The nurse should also explain to the patients why windows cannot be opened in the health facility. Nurses should ensure that the patient's rooms are as clean as possible. Straightening and changing the bed linen on the patients bed when necessary is of importance. The nurses should also empty the commode toilets to avoid foul smell in the rooms ***(Cojoc& Ngui, 2011)***.

The hospital should be a place of rest and rejuvenation. It is, however, a place where many activities happen and a lot of unwelcome noises are produced. Noise comes from pushed trolleys, neighboring patients or from

the healthcare staff. Healthcare staff should avoid speaking with a loud voice in the corridors. Nurses should have the upper hand in controlling the noise in the patients' rooms by talking to the patient who may be having visitors till late, watching TV with the sound turned up after bed time .The environment should allow patients to have some privacy. This means that the nurse should knock before entering the room and there should be curtains between beds in rooms with multiple patients. Same sex patients should be put in the same rooms ***(Cojoc& Ngui, 2011).***

Group and planned activities such as playing card games, watching and discussing movies, or participating in informal discussions give clients the opportunity to talk about events or issues when they are calm. Activities also engage clients in the therapeutic process and minimize boredom. Scheduling one-to-one interactions with clients indicates the nurse's genuine interest in the client and a willingness to listen to the client's concerns, thoughts, and feelings. Knowing what to expect enhances the client's feelings of security. If clients have a conflict or dispute with one another, the nurse can offer the opportunity for problem-solving or conflict resolution ***(Videbeck, 2011).***

Expressing angry feelings appropriately, using assertive communication statements, and negotiating a solution are important skills clients can practice. These skills will be useful for the client when he or she returns to the community. If a client is psychotic, hyperactive, or intoxicated, the nurse must consider the safety and security of other clients, who may need protection from the intrusive or threatening demeanor of that client. Talking with other clients about their feelings is helpful, and close supervision of the client who is potentially aggressive is essential ***(Videbeck, 2011)***. A therapeutic environment is one that allows individuals to enjoy safety and security, privacy, dignity, choice and independence, without

compromising the clinical objectiveness of the services. Comfort, noise, control, light, color and access to space will all have an impact on the wellbeing of both staff and the service user ***(Ballard et al., 2009)***.

D- Time Out:

When aggression is imminent it may be appropriate to offer the person time out. Time out has been shown to be effective procedure in the treatment of aggressive behavior ***(Videbeck, 2010)***. This may involve taking them to a quite area of the ward or to their bedroom for a short period where they can calm down in a safe, quite area. Some clinical areas also have intensive care areas where people who are at risk of displaying violence are nursed over the 24 hours period, their contact with other people being limited to the nurses looking after them. This approach may lessen the need for emergency interventions, and gradual introduction of the patient to the rest of the people in the clinical area can help the user to slowly build the ability to interact effectively with other without the use of violence ***(Bowers et al., 2009)***.

E- Pharmacological intervention:

Pharmacological interventions are effective in the management of aggressive behavior ***(Hankin et al., 2011)***.early use of medication can reduce the incidence of seclusion and restraint among high-risk patients early in their hospitalization ***(Goldbloom et al., 2010)***.Several researches have shown that aggressive patients more often use psychotropic compared to non aggressive patients. It is not surprising that a broad range of psychotropic has been investigated for their anti-aggressive properties. However, despite the high prevalence of psychotropic drugs use in aggressive patients, evidence for the efficiency of a specific pharmacological management of aggressive behavior is currently lacking. Lack of evidence is reflected by the existence of a variety of guidelines for the emergency

management of aggression and presence of too many different approaches for the management of acute aggression ***(NICE, 2006)***.

Psychopharmacology of aggression in acute situation and maintenance pharmacotherapy of aggression is different. In acute situation, drugs are administered to stop dangerous situation by sedation or motor interference such as muscle weakness. However for maintenance therapy, i.e., pharmacotherapy for patients to whom aggression is ongoing problem, drugs with antiaggression properties that act on neurotransmitter pathway specifically implicated in medication of aggression are used rather than long-term sedation which might has undesirable effects ***(Coccaro&Siever, 2009)***.The staff must observe and carefully document the patient's behavior and responses before and after the initiation of the medication regimen. Evaluation of the appropriateness of a specific medication is the basis for continuing, stopping or changing. Medications may not be advisable if aggressive patients are potentially under the influence of an unknown substance ***(Mohr, 2009)***.

(3) Containment strategies:

- Use of restraint and seclusion:

Restraint and seclusion are necessary intervention to ensure safety in volatile situations in which client behaviors pose a risk of physical harm to self or others ***(National Executive Training Institute, 2007)***.Today, the use of seclusion within psychiatric sittings is contentious. However, there is a growing evidence base indicates that it is viewed negatively by patients and causes symptoms of severe distress ***(Hyde et al., 2009)***.Several important terms are relevant to the discussion of restraint and seclusion, restraint can be defined as physical restraint or chemical restraint, while physical restraint

as any manual method or physical or mechanical device, material or equipment attached to a person's body and chemical restraint can be defined as a medication used to control behavior or to restrict freedom of movement and is not a typical or standard treatment for the person's medical or psychiatric condition***(Kostelnick,2015)***.

Restraint considered as immediate action that is taken when assaults occur, six to eight members are needed to safely control a patient and ensure that no injuries to the staff, the patient or other patients on the unit will occur ***(United State Department of Health and Human Services, 2010)***.It is important to inform the patient that the team is here to help, will not hurt the patient, and will not allow the patient to hurt anyone. Two team members approach from each side and take control of the patient's arms simultaneously, three other staff members quickly take control of the patient's legs and head so that the patient can be carried to the room for seclusion or restraint ***(Hyde et al., 2009).***

Face- to- face assessment within one hour after placing a patient in restraints is required. This evaluation should include physical risks of loss of life; other physical dangers and discomforts; the patient's psychological state; and legal and ethical concerns for the events ***(Nadler-Moodie, 2009).*** Physical need must be addressed in the nursing documentation. Vital signs should be checked, and regular observation of circulation in the extremities is necessary. Fluids should be offered regularly and opportunities for elimination provided. Skin care is also essential. Restraints should be released at least every 2 hours to allow exercise of the extremities ***(Stuart, 2013).***

Legal requirements for the care of the secluded patient vary from state to state. Good nursing care includes optimum fulfillment of basic

human needs and concern for personal dignity. Staff should be able to communicate with the patient .careful records should include all nursing care and observation of the isolated patient. The need for continued isolation should be assessed on a regular basis. It may be necessary for the nurse to initiate this review of the patient's condition with other health team members ***(Allen et al., 2009).***

Restraint and seclusion create significant risks for psychiatric patient, dehumanizing them and causing loss of dignity. In addition, nurses and other staff may be at risk for assault by some patients during a restraint procedure resulting in physical injury, psychological suffering, lost work time and financial costs. Because of these risks, a primary guideline is that use should be limited to emergencies in which the risk of a patient physically harming self, staff or others is imminent and only when other less restrictive interventions to ensure client safety have been failed. When restraint and seclusion are implemented, they should be discontinued as soon as possible. Coercion, discipline, convenience or retaliation by staff members are unacceptable reasons for placing patients in restraint or seclusion ***(Wahba, 2010).***

Health care team particularly the nurses who take the lead before and after seclusion episodes, are emotionally uncomfortable with such measures. The nurses need to comfort the distressing emotions they experience in response to restraint and seclusion incidents. In turn, the nurses' communication and relationships with the client would potentially improve and their ability to manage the aggressive behavior of their clients would be enhanced ***(Moran et al., 2009).***

- Terminating the intervention:

Patients must be removed from seclusion or restraints as soon as they meet criteria for release. It is important to review with the patient the behaviors that led to the intervention and for the patient to be told which behaviors or impulses they need to control before the intervention can be discontinued. Communication and careful documentation are critical in making an accurate assessment of a patient's level of control. Debriefing is an important part of terminating the use of seclusion or restraints. It is a therapeutic intervention that includes reviewing the facts related to an event and processing the response to them. It provides staff and patients with an opportunity to clarify the rationale for the seclusion, offer mutual feedback, and identify alternative methods of coping that might help the patient avoid seclusion in the future ***(Bonner et al., 2010;Larue et al., 2010; and Needham & Sands, 2010).***

Role of nurse in the prevention of aggressive behavior:

Due to the significant consequences of aggressive behavior, steps for prevention and treatment must be taken to mitigate these harmful effects. Understanding the risk factors for aggressive behavior is vital to effective prevention and intervention ***(Liu, 2013)***.

A three-pronged approach for the prevention and intervention of aggressive and violent behavior are recommended. The first involves the use of primary prevention programs focusing on the prenatal and perinatal periods of birth. Prenatal nurses and nurse midwifes can provide good prenatal care and screen for risk factors. In addition, they can educate mothers on proper prenatal care, including the importance of nutrition and the avoidance of smoking, drinking, or other harmful activities. For instance, supplementation with different nutrients or micronutrients (e.g., thiamine,

lithium, and tryptophan) has been shown to lead to decreased aggressive behavior. Postpartum nurses can instruct parents about proper parenting skills and the importance of breastfeeding. However, there is conflicting evidence about whether breastfeeding protects against behavior problems or not ***(Kramer, 2010; Kramer et al., 2008; and Oddy et al., 2010).***

The second approach could target prevention efforts toward vulnerable populations, such as pregnant teenagers and at-risk families (e.g., those with a history of violence). Again, patient education about the damage of prenatal smoking or drinking may be beneficial. School nurses can monitor child growth and development. Additionally, they can work with teachers to detect the warning signs of aggressive behavior and explain emotion management techniques. School nurses can also instruct nurses about different techniques to reduce aggressive behavior in children and adolescents that already exhibit it. For example, massage therapy helped decrease aggressive behavior in preschool children ***(Von Knorring et al., 2008)***. Separate case reports have suggested that meditation, relaxation breathing exercises, and music therapy could be effective in lessening aggressive behavior ***(Gaines & Barry, 2008)***.

Community health and public health nurses can help at-risk families through enrollment in school-based or community-based prevention programs or family-strengthening programs, which have been shown to be effective ***(Liu, 2013)***. The Head Start program, when incorporating an emotion-based prevention program, led to increases in emotion knowledge and regulation and decreases in aggressive behavior, negative emotion expressions, and negative peer and adult interactions ***(Izard et al., 2008)***.

Finally, the third approach involves the actual treatment of those individuals that develop aggressive behavior. Psychiatric nurses are very involved in the traditional methods of intervention, such as psychotherapy or psychopharmacology. Cognitive behavioral therapy (CBT) attempts to address dysfunctional emotional, behavioral, and cognitive problems by helping patients adopt healthier behaviors and thinking patterns. Studies have shown the effectiveness of CBT in reducing anger and aggressive behavior in children, adolescents, and adults ***(Liu, 2013)***.

Nurses may be particularly effective in the implementation of these behavioral strategies as they have continual contact with patients and are involved with care giving throughout the patient's day. Nurses are important for risk assessment, as they have the opportunity to predict whether future aggression is likely based on past behaviors .Not only are nurses likely to be very familiar with a patient's given "triggers" for aggressive behavior, their ongoing involvement with patients means they have ample opportunities to teach skill building for reducing aggressive behavior. For the actual treatment of aggressive behavior, medication is an effective tool. For inpatients, the quality of the nurse-patient relationship appears to be the most significant determinant of whether patients decide to take their medications ***(Irwin, 2006)***. Therefore, nurses have an important part to play in prevention, risk assessment, and treatment of aggressive behavior.

Subject and Methods

The aim of this study was to assess risk factors for aggressive and violence behavior among schizophrenic patients.

Research Question:-

What are risk factors for aggressive and violence behavior among schizophrenic patients?

Operational definition:

Risk factors of aggression can be operationally defined by risk factor measurement score obtained from risk factors of aggression questionnaire developed and validated by the researcher and banal of expertise.

I-Technical design:

Research design:-

A descriptive design was utilized to achieve the aim of this study.

Setting:-

The study was carried out at the inpatient Psychiatric units of Mental Health Hospital in Benha City, Qaliubiya Governorate which is affiliated to the General Secretariat. The hospital capacity is 232 beds. It serves psychotic patients of five departments. It consisted of four units for male patients and one unit for female patients and the total number of schizophrenic patients was 165 patients.

Sampling:-

Sample size: based on the outcome of the previous study and at confidence interval (CI) 95% and at power analysis 80%, the sample size ranged from 60-80, so that the sample size was 80.

Sample technique: Convenience sample of (80) schizophrenic patients (50 male and 30 female) from Psychiatric Mental Health Hospital in Benha City who fulfilled the following inclusion and exclusion criteria:

Inclusion criteria: a - Both sex.

b -Agree to participate in the study.

c - Schizophrenic inpatient in residual phase.

Exclusion criteria*:* -Schizophrenic comorbidity

Tools of data collection:-

Tool one: Interview questionnaire sheet was developed by the researcher that included the following parts: **Appendix (I)**

Part A: It consisted of 11 items to elicit data about the socio demographic characteristics of studied patients and their families such as age, sex, birth order, level of education, marital status, occupation ,place of residence, family income, number of family members, family blood relation and family history of violent behavior.

Part B: It consisted of 7 items that assess the clinical characteristics of studied patients such as schizophrenic subtype, length of hospitalization, mode of admission, history of head injury, smoking, history of substance abuse and compliance on psychiatric medications.

Part c: It consisted of 4 questions regarding previous history of violence before entering the hospital and the history of committing violence inside the hospital, numbers and forms of it.

Tool two: Appendix (I): Interview questionnaire sheet was developed and validated by the researcher in the form of likart scale to assess patients' risk factors for aggression. It consisted of 47 items in the form of three point likart scale each item has a set of three levels Yes, No and Unknown. The item "Yes" take score 3, the item "No" take score 2, and the item "Unknown" take score 1. It divided into 4 subscale (14) items to measure static risk factors about committing violence at an earlier age, exposure to physical abuse in childhood, any problems between patient and his family led to violence, any problems during the study period …….etc , (9) items to measure dynamic and clinical risk factors about patient's insight of his disease, hearing any voices that order the patient to make any aggressive things, seeing things that push the patient to violence…….etc, (14) items to measure staff related factors about listening of health team to the patient when he in need, giving the patient the information if he want about his condition, isolating the patient in a single room, suffering from carelessness and delaying in providing medical care…….etc and (10) items to measure unit and environmental factors as crowding, noise, poor ventilation and lack of cleanliness in the ward, availability of privacy for the patient, availability of daily supplies of drugs or meals…….etc.

Scoring system:-

-**Static risk factors:** No risk: less than (22), mild risk (22-28), moderate risk (29-36), high risk (37-42).

-**Clinical and dynamic risk factors:** No risk: less than (14), mild risk (14-18), moderate risk (19-23), high risk (24-27).

-**Staff risk factors:** No risk: less than (22), mild risk (22-28), moderate risk (29-36), high risk (37-42).

-**Environmental risk factors:** No risk: less than (16), mild risk (16-20), moderate risk (21-24), high risk (25-30).

II-Operational design:

Preparatory Phase:-

This phase included reviewing of relevant literature and different studies related to the topic of research, using textbooks, articles, magazines, periodicals and internet search was done to get a clear picture of all aspects related to the research topic.

Pilot study:-

After the tools have been designed, they were tested through a pilot study, which was done before embarking on the field work to check the clarity and feasibility of a designed tool to be sure that it was understood and to estimate the time needed to complete its items. It was carried out on a sample of 8 schizophrenic patients, who were excluded from the main study sample. After its implementation and according to its result, the necessary modifications were done.

Content Validity:-

Before starting the data collection, the tool was tested for its content validity which was done by a jury consisting of a group of (5) experts specialized in the psychiatric nursing field; they were check the

relevancy, clarity, comprehensiveness, and applicability of the questions. According to their opinions, modifications were done and the final form was developed. The modifications were (modify some words to give the right meaning of the phrase, added some phrases and questions).

Reliability of the tool:-

Cronbach's alpha coefficient was calculated to assess the reliability of the developed tool (risk factors for aggressive behavior and violence among schizophrenic patients), through their internal consistency (Average reliability of questions) for Static factors, clinical and dynamic factors, staff related factors and unit and environmental related factors were 0.878,0.778,0.805and 0.813 respectively.

Data Collection procedure:-

Before starting any step in the study an official letter was addressed from the faculty of Nursing, Benha University to the director of the General Secretariat of Mental Health, Benha Psychiatric Hospital at El Qaliubiya governorate, requesting their cooperation and permission to conduct the study.

- Once the official permissions were obtained from the principal person, and the other authorized personnel from the various settings, the researcher started the data collection.

-The investigator started data collection by introducing himself to the participant.

-Then a brief description of the purpose of the study and the type of questionnaire required to fill was given to each participant.

- Data collected were done through interviewing with the patients in hospital.

-The researcher started to collect the data from patients two days/ per week.

-Each interview lasted for 20-30 minutes, depending on the response of the patients. The process of data collection took a period of three months from the middle of March 2015 to middle of June 2015.

III-Administration design:

Approval:

A written letter was issued from the Dean of faculty of Nursing, Benha University to obtain the approval for data collection from the Psychiatric Mental hospital and then from the General Secretariat. The objectives and the nature of the study were explained and then it was possible to carry out the study with minimum resistance.

IV-Ethical Consideration:-

Before conducting the study, all subjects informed that participation in the study is voluntary. Subjects were assured that the data collected from the questionnaires will remain confidential and that no personal identification was needed by any means. Patients were informed that the content of the tool will be used for research purpose only and they could refuse to participate in the study, or withdraw from it at any time.

v-Statistical Analysis:-

Analysis of data was carried out and the collected data were organized, coded, computerized and tabulated and analyzed by using the Statistical Package for Social Science (SPSS) programs. Data were presented using descriptive statistics in the form of frequencies and percentage for qualitative variables and mean and standard deviation for quantitative variables. Qualitative variables were compared using Chi-square test **(x^2)**.Quantitative data were compared using T or F test. A significant level value was considered when p-value <0.05 and a highly significant level value was considered when p-value <0.001, while p-value of >0.05 indicated no significant result.

Limitations of the study:-

There were no limitations of this study but there were some difficulties as:

- Dealing with subjects was relatively difficult, some of them refused to participate in the study even after ensuring the confidentiality.

- Some patients leaving me during interview after answering some questions and refused to complete the questionnaire and some of them leaving answering of the questions and talking about any other thing or going out the room then coming again.

Results

Results of this study will be demonstrated according to the following parts:-

Part I: Socio-demographic Characteristics of studied patients and their families **(Table 1, 2).**

Part II: Clinical Characteristics of studied patients **(Table 3).**

Part III: The history of aggressive and violence behavior before entering the hospital and inside the hospital **(Table 4).**

Part IV: Distribution of static risk factors of aggressive and violence behavior among studied patients **(Table 5)**.

Part V: Distribution of clinical and dynamic risk factors of aggressive and violence behavior among studied patients **(Table 6)**.

Part VI: Distribution of staff risk factors of aggressive and violence behavior among studied patients **(Table 7)**.

Part VII: Distribution of unit and environmental risk factors of aggressive and violence behavior among studied patients **(Table 8)**.

Part VIII: Relationship between aggressive and violence behavior inside the hospital, the type of aggressive behavior inside the hospital and mean score of static risk factors of aggression **(Table 9, 10).**

Part IX: Relationship between aggressive and violence behavior inside the hospital, the type of aggressive behavior inside the hospital and

mean score of clinical and dynamic risk factors of aggression **(Table 11, 12).**

Part X: Relationship between aggressive and violence behavior inside the hospital, the type of aggressive behavior inside the hospital and mean score of staff risk factors of aggression **(Table 13, 14)**.

Part XI: Relationship between aggressive and violence behavior inside the hospital, the type of aggressive behavior inside the hospital and mean score of unit and environmental risk factors of aggression **(Table 15, 16)**.

Part XII: Relationship between aggressive and violence behavior before entering the hospital, inside the hospital and the socio-demographic Characteristics of studied patients and their families **(Table 17, 18).**

Part XIII: Relationship between aggressive and violence behavior inside the hospital, the type of aggressive behavior inside the hospital and the clinical characteristics of studied patients **(Table 19, 20)**.

Table (1):-Distribution of schizophrenic patients according to their socio-demographic characteristics **(n=80).**

Socio-demographic Characteristics	Studied schizophrenic patients	
	N	%
Age		
< 20 years	3	3.75
20- < 30	8	10
30- < 40	24	30
40 - and more	45	56.25
Mean±SD	38.875±8.189	
Sex		
Male	50	62.5
Female	30	37.5
Marital status		
Single	52	65
Married	20	25
Divorced	8	10
Level of education:		
Illiterate	26	32.5
Reads and write	7	8.75
Primary education	10	12.5
Secondary education	26	32.5
University education	11	13.75
Occupation		
Employee	12	15
Unemployed	68	85
Income		
Enough	28	35
Enough and save	2	2.5
Not enough	50	62.5
Residence		
Rural	59	73.75
Urban	21	26.25
Birth order		
First	19	23.75
Middle	34	42.5
The latter	17	21.25
The only	10	12.5

Table (1): Shows the socio-demographic characteristics of studied schizophrenic patients, this table reveals that their mean age are 38.875±8.189 years, around two thirds of them are males and single (65%&62.5% respectively), the majority of them (85.0%) are unemployed and less than three quarters of them (73.75%**)** are from rural area.

Table (2): Distribution of schizophrenic patients according to their families Characteristics.

Family characteristics	Studied schizophrenic patients	
	N	%
Number of family members		
<3	2	2.5
3-6	48	60
> 6	30	37.5
Family blood relation		
Yes	31	38.75
No	49	61.25
Family history of violent behavior		
Yes	39	48.75
No	41	51.25

Table (2): Shows the family Characteristics of studied patients ,this table reveals that more than one third (38.75%) of them have family blood relation and nearly half of them (48.75%) have family history of violent behavior.

Table (3):-Distribution of schizophrenic patients according to their clinical characteristics **(n=80).**

Clinical characteristics	Studied schizophrenic patients(n=80)	
	N	%
Type of schizophrenia		
Paranoid schizophrenia	29	36.25
Chronic	32	41.25
Undifferentiated	17	21.25
Affective	2	2.50
Length hospitalization		
<1 year	11	13.75
1year - <2 year	6	7.50
2 years - < 3 year	3	3.75
3-5 years	17	21.25
More years	43	53.75
Mode of admission		
Voluntary	15	18.75
Involuntary	65	81.25
History of presence of any head injuries		
Yes	27	33.75
No	53	66.25
Smoking		
Yes	63	78.75
No	17	21.25
Substance abuse		
Yes	28	35.00
No	52	65.00
Drug compliance		
Yes	53	66.25
No	27	33.75

Table (3): Shows the clinical characteristics of studied patients, this table reveals that the majority (81.25%) of them are involuntary admitted to the hospital, one third of them (33.75%) have a history of head injury, the majority of them (78.75%) are smokers, while more than one third (35.0%) of them have a history of substance abuse. As regard drug compliance, two thirds of them (66.25%) are compliant.

Table (4):-Distribution of schizophrenic patients according to the history of aggressive and violence behavior before entering the hospital and inside the hospital **(n=80).**

History of aggressive and violence behavior	Studied schizophrenic patients	
	N	%
History of violence before entering the hospital		
Yes	42	52.50
No	38	47.50
History of aggressive behavior inside the hospital		
Yes	61	76.25
No	19	23.75
Number of violence inside the hospital (n=61)		
Once	32	52.45
Twice	16	26.22
Three times& more	13	21.31
Types of aggressive behavior inside the hospital (n=61)		
Verbal	35	57.37
Physical directed toward self	6	9.83
Physical directed toward others	16	26.22
Physical directed toward the surrounding environment	4	6.55

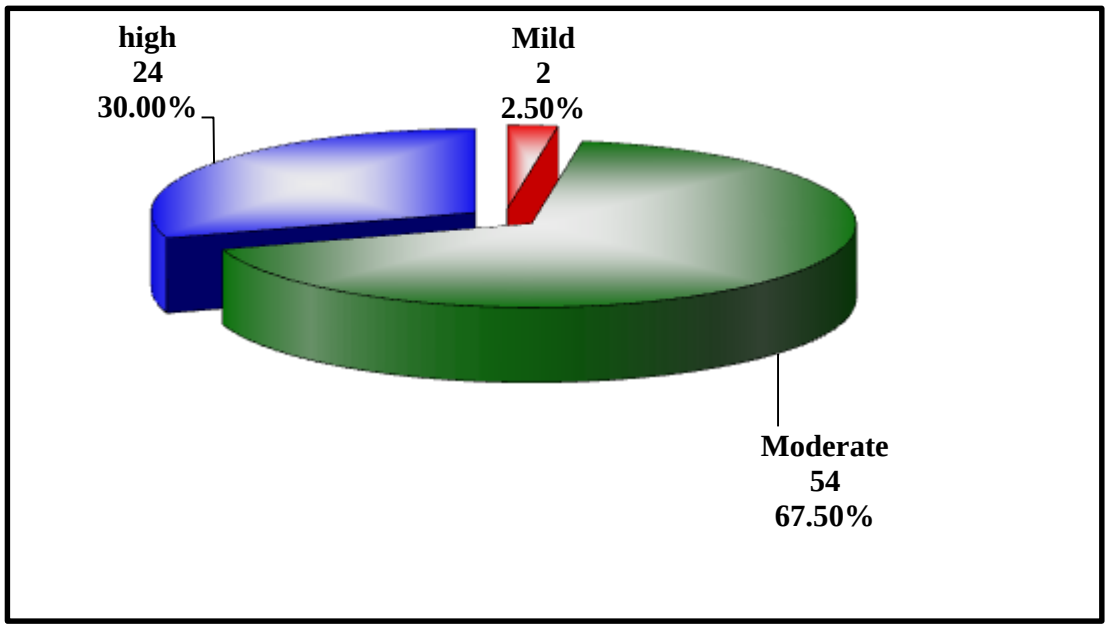
Table (4): Represents the history of aggressive and violence behavior before entering and inside the hospital, it shows that half of studied patients (52.50%) have a previous history of violence before entering the hospital. Regarding the history of aggressive behavior inside the hospital, more than three quarters of them (76.25%) have a previous history of committing aggression during hospitalization and more than half of them (52.45%) committed it one time .In relation to the distribution of types of aggressive behavior, the table illustrates that more than half of them (57.37%) exhibited verbal aggression, followed by physical aggression against others (26.22%).

Table (5): Distribution of static risk factors of aggressive and violence behavior among studied patients (**n=80**)

Static risk factors	Yes		No		Do not know	
	N	%	N	%	N	%
Committed violence acts at an earlier age	35	43.75	45	56.25	0	0.00
Exposed to physical abuse in childhood	42	52.50	35	43.75	3	3.75
Have problems with one of your family members	40	50.00	40	50.00	0	0.00
Have felt that there is difference in the relation at home	49	61.25	30	37.50	1	1.25
Exposed to the cruelty and neglect from parents	46	57.50	33	41.25	1	1.25
Have marital separation between the father and the mother	30	37.50	49	61.25	1	1.25
Have problems with colleagues during the study period	16	20.00	64	80.00	0	0.00
Exposed to failure and lack of compatibility in study	30	37.50	50	62.50	0	0.00
Have conflict with colleagues at work	17	21.25	61	76.25	2	2.50
Exposed to failures and incompatibilities in job	21	26.25	58	72.50	1	1.25
Have any personal losses during life	42	52.50	37	46.25	1	1.25
Tried to commit suicide during life	39	48.75	41	51.25	0	0.00
Felt frustrated due to inability to solve problems	59	73.75	21	26.25	0	0.00
Exposed to a lot of stress in life	61	76.25	18	22.50	1	1.25

Table (5): Illustrates static risk factors of aggressive and violence behavior among studied patients, this table reveals that more than half of them were exposed to physical abuse in childhood, cruelty and neglect from parents, personal losses during their life and they felt that there was difference in the relation at home (52.5%& 57.5%&52.5%&61.25% respectively). About three quarters of them felt frustration due to inability to solve their problems and they were exposed to a lot of stress in their life (73.75%&76.25% respectively).

Figure (1): Distribution of the levels of static risk factors of aggression among studied patients. **n= (80)**



X^2=51.1 P-value<0.001*

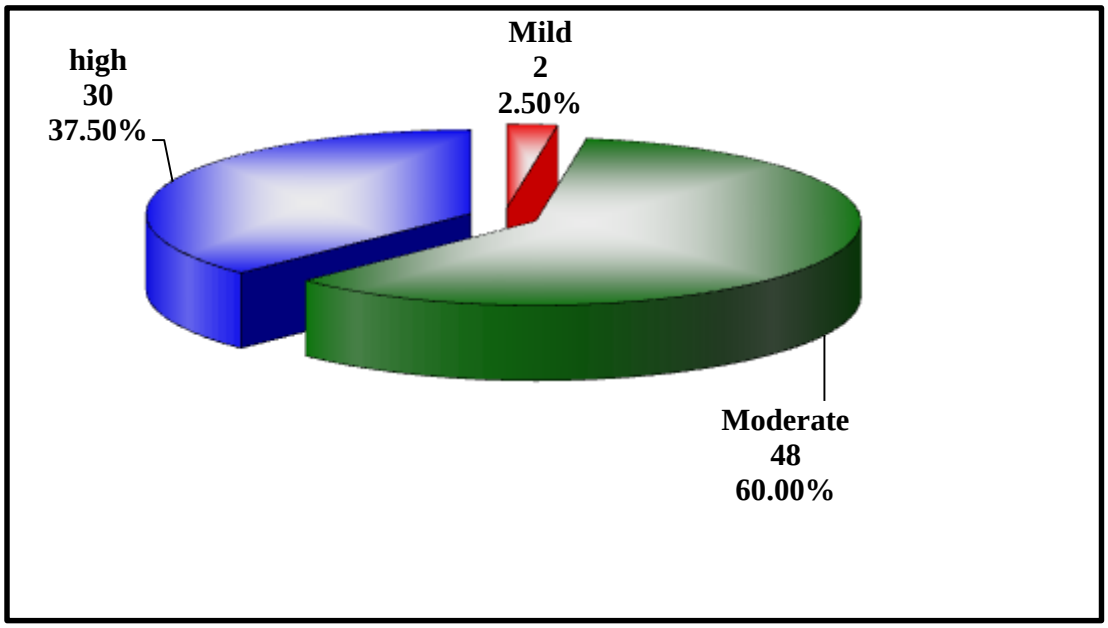
Figure (1): This figure shows that more than quarter of studied patients (30%) have high static related risk factors of aggression and two thirds (67.50%) have moderate related risk factors of aggression with statistical significant difference at P-value<0.001*.

Table (6): Distribution of clinical and dynamic risk factors of aggressive and violence behavior among studied patients **(n=80)**

Clinical and dynamic factors	Yes		No		Do not know	
	N	%	N	%	N	%
Have a psychiatric illness	30	37.50	45	56.25	5	6.25
Hear voices that order you to make aggressive things	40	50.00	40	50.00	0	0.00
Think that there are some persons intend to harm you	45	56.25	35	43.75	0	0.00
See things around you that push you to violence	26	32.50	54	67.50	0	0.00
Have any aggressive thoughts control you	27	33.75	52	65.00	1	1.25
Feel angry quickly when do not satisfy your needs	49	61.25	31	38.75	0	0.00
Feel angry when you are dominated by another patient	37	46.25	43	53.75	0	0.00
Feel unsecure in the hospital	55	68.75	25	31.25	0	0.00
Wish to leave the hospital	74	92.50	6	7.50	0	0.00

Table (6): Illustrates clinical and dynamic risk factors of aggressive and violence behavior of studied patients, this table shows that the majority of them (92.50%) wish to leave the hospital, while more than two thirds of them (68.75%) feel unsecure in the hospital, more than half of them (56.25%) believe that they do not have a psychiatric illness to be in the hospital, half of them (50.0%) have (auditory hallucination) hear voices order them to make aggressive things, nearly one third of them see things around them that push them to violence and they have aggressive thoughts that control them (32.50% & 33.75% respectively).

Figure (2): Distribution of the levels of clinical and dynamic risk factors of aggression among studied patients.



X^2=40.30 P-value<0.001*

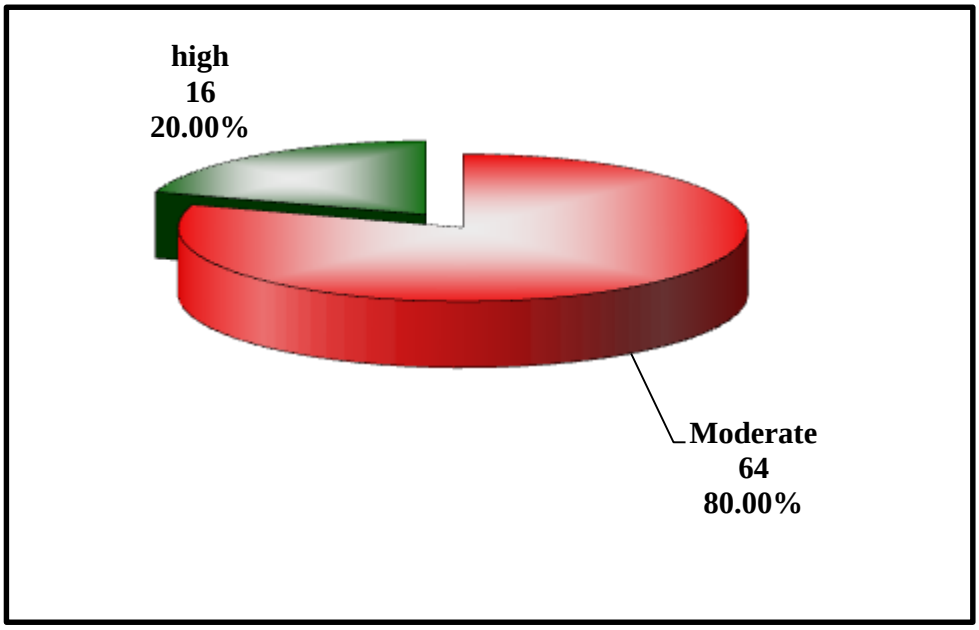
Figure (2): This figure shows that more than one third of studied patients (37.50%) have high risk of clinical and dynamic related factors of aggression and less than two thirds (60.00%) have moderate risk with statistical significant difference at P-value<0.001*.

Table (7): Distribution of staff related factors as a risk factor of aggressive and violence behavior among studied patients **(n=80)**

Staff related factors	Yes		No		Do not know	
	N	%	N	%	N	%
The health team listen to you when you in need	45	56.25	35	43.75	0	0.00
They give you the information want about your condition	35	43.75	45	56.25	0	0.00
They deliberately provoke your anger	21	26.25	59	73.75	0	0.00
They isolate you tying in bed in a single room	22	27.50	58	72.50	0	0.00
Suffer from carelessness and delaying in providing medical care for you	28	35.00	52	65.00	0	0.00
They give you orders repeatedly or many questions	54	67.50	26	32.50	0	0.00
They force you to take medications	40	50.00	40	50.00	0	0.00
They force you to go to sleep	38	47.50	42	52.50	0	0.00
They force you not to smoke	43	53.75	37	46.25	0	0.00
They encourage you to use violence against another patient	9	11.25	71	88.75	0	0.00
Have a personal problem between you and the health team	26	32.50	54	67.50	0	0.00
The health team agree on unified style for dealing with you	53	66.25	27	33.75	0	0.00
The health team change continuously with you	38	47.50	42	52.50	0	0.00
There is a nursing staff with you continuously	62	77.50	18	22.50	0	0.00

Table (7): Shows staff related factors of aggressive and violence behavior among studied patients, this table illustrates that more than half of studied patients report that the health team doesn't give them the information they want about their condition and they force them not to smoke (56.25%&53.75% respectively). Half of them (50.0%) report that the staff forces them to take medications, more than one quarter of them report that the staff deliberately provokes their anger and they isolate them tying in bed in a single room (26.25%&27.50% respectively).Nearly one third of them report that they have a personal problem between the health team and the health team are inconsistent in dealing with them (32.50%&33.75% respectively),two thirds of them (67.50%) report that the health team give them orders repeatedly and (11.25%) of them report that the health team encourages them to use violence against another patients.

Figure (3): Distribution of staff risk factors of aggression among studied patients.



X^2=27.612 P-value<0.001*

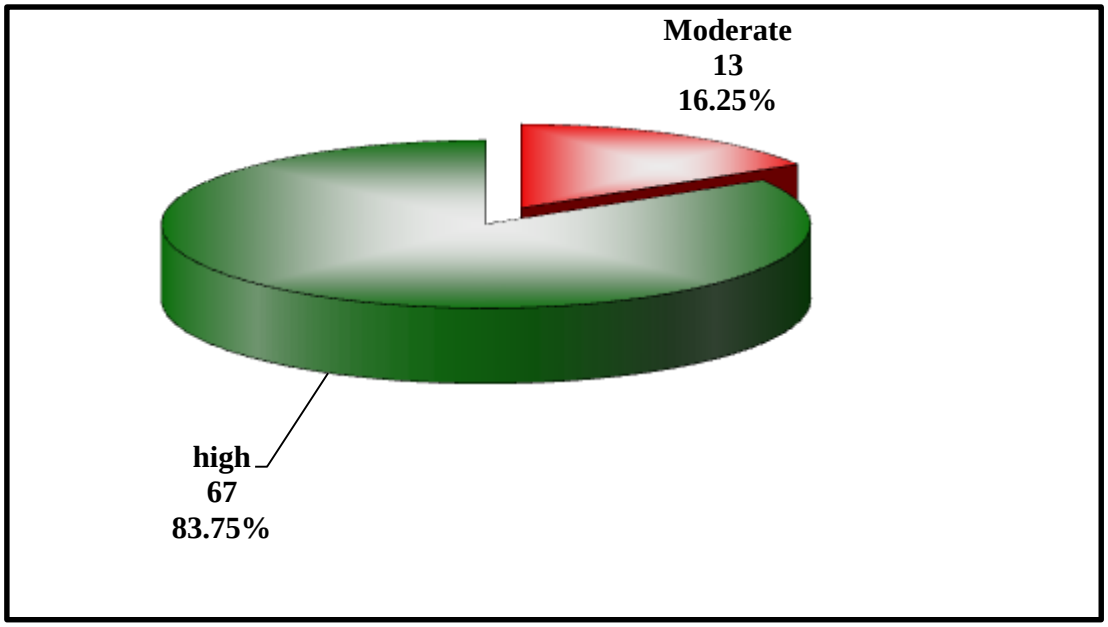
Figure (3): This figure shows that all studied patients have the risk of staff related factors of aggression, the majority of them (80.00%) have moderate risk of staff related factors of aggression with statistical significant difference at P-value<0.001*.

Table (8): Distribution of unit and environmental related factors as a risk factor of aggressive and violence behavior among studied patients **(n=80)**

Unit and environmental related factors	Yes		No		Do not know	
	N	%	N	%	N	%
Too crowding in the ward	49	61.25	31	38.75	0	0.00
Feel the noise in the ward	57	71.25	23	28.75	0	0.00
Poor ventilation and lack of cleanliness in the ward	27	33.75	53	66.25	0	0.00
Privacy available for you	27	33.75	53	66.25	0	0.00
Daily supplies of drugs or meals available for you	65	81.25	15	18.75	0	0.00
Entertaining and interesting activities such as watching television department, play a sport available for you in the ward	30	37.50	50	62.50	0	0.00
Food is served to you on time	62	77.50	18	22.50	0	0.00
Allow to get out for visit	61	76.25	19	23.75	0	0.00
There are means of communication with your family	30	37.50	50	62.50	0	0.00
The door of ward closes constantly	71	88.75	9	11.25	0	0.00

Table (8): Shows unit and environmental related factors of aggressive and violence behavior among studied patients, this table reveals that majority of the patients (88.75%) report that the door is closed constantly, more than two thirds of them (71.25%) report that they feel noise in the ward, two thirds (66.25%) report that there is lack of privacy available for them, less than two thirds of them report that there is too crowding in the ward, there are no entertaining and interesting activities and there are no means of communication with their families (61.25%&62.50% respectively). One third (33.75%) of them report that there are poor ventilation and cleanness in the ward, nearly one quarter of them report that the food is not served to them on time and they are not allowed getting out for visit (22.50%&23.75% respectively) and (18.75%) reports that the daily supplies of drugs or meals aren't available for them.

Figure (4): Distribution of unit and environmental risk factors of aggression among studied patients.



X^2=35.112 P-value<0.001*

Figure (4): This figure shows that the majority of the studied patients (83.75%) have high risk of unit and environmental related factors of aggression with statistical significant difference at P-value<0.001*.

Table (9): Relationship between the history of aggressive behavior inside the hospital and mean score of static risk factors of aggressive and violence behavior:

History of aggressive behavior inside the hospital	N	Static risk factors	Test value	T-test	
		Mean ± SD		T	P-value
Yes	61	34.607 ± 3.494	T	0.765	0.447
No	19	33.947 ± 2.438			

**** Not statistically significant***

Table (9): It reveals that there is no statistical significant relationship between the history of aggressive behavior inside the hospital and static risk factors.

Table (10): Relationship between the type of aggressive behavior inside the hospital and mean score of static risk factors of aggression:

Type of aggressive behavior inside the hospital	N	Static risk factors	Test value	ANOVA test	
		Mean ± SD		F	P-value
Verbal	35	34.171 ± 2.864	F	0.715	0.547
Physical directed toward the self	6	35.833 ± 6.047			
Physical directed toward others	16	34.688 ± 3.400			
Physical directed towards the surrounding environment	4	36.250 ± 4.856			

**** Not statistically significant***

Table (10): It reveals that there is no statistical significant relationship between static risk factors and the type of aggressive behavior inside the hospital.

Table (11): Relationship between the history of aggressive behavior inside the hospital and mean score of clinical and dynamic risk factors of aggression:

History of aggressive behavior inside the hospital	N	clinical and dynamic risk factors	Test value	T-test	
		Mean ± SD		T	P-value
Yes	61	22.869 ± 2.101	T	1.204	0.232
No	19	22.211 ± 2.016			

**** Not statistically significant***

Table (11): This table reveals that there is no statistical significant relationship between clinical and dynamic risk factors and the history of aggressive behavior inside the hospital.

Table (12): Relationship between the type of aggressive behavior inside the hospital and mean score of clinical and dynamic risk factors of aggression:

Type of aggressive behavior inside the hospital	N	clinical and dynamic risk factors	Test value	ANOVA test	
		Mean ± SD		F	P-value
Verbal	35	22.571 ± 1.960	F	2.581	0.062
Physical directed toward the self	6	21.500 ± 2.345			
Physical directed toward others	16	23.813 ± 2.105			
Physical directed towards the surrounding environment	4	23.750 ± 1.708			

**** Not statistically significant***

Table (12): It reveals that there is no statistical significant difference between clinical and dynamic risk factors and the type of aggressive behavior inside the hospital.

Table (13): Relationship between the history of aggressive behavior inside the hospital and mean score of staff risk factors of aggression:

History of aggressive behavior inside the hospital	N	staff risk factors	Test value	T-test	
		Mean ± SD		T	P-value
Yes	61	34.639 ± 2.273	T	1.495	0.139
No	19	33.737 ± 2.377			

**** Not statistically significant***

Table (13): This table reveals that there is no statistical significant relationship between staff risk factors and the history of aggressive behavior inside the hospital.

Table (14): Relationship between the type of aggressive behavior inside the hospital and mean score of staff risk factors of aggression:

Type of aggressive behavior inside the hospital	N	staff risk factors	Test value	T-test	
		Mean ± SD		T	P-value
Verbal	35	34.200 ± 2.194	F	1.622	0.194
Physical directed toward the self	6	35.333 ± 2.251			
Physical directed toward others	16	34.875 ± 2.527			
Physical directed towards the surrounding environment	4	36.500 ± 0.577			

**** Not statistically significant***

Table (14): This table reveals that there is no statistical significant relationship between staff risk factors and the type of aggressive behavior inside the hospital.

Table (15): Relationship between the history of aggressive behavior inside the hospital and mean score of unit and environmental risk factors of aggression:

History of aggressive behavior inside the hospital	N	unit and environmental risk factors	Test value	T-test	
		Mean ± SD		T	P-value
Yes	61	25.934 ± 1.611	T	-0.531	0.597
No	19	26.158 ± 1.573			

**** Not statistically significant***

Table (15): This table reveals that there is no statistical significant relationship between unit and environmental risk factors and the history of aggressive behavior inside the hospital.

Table (16): Relationship between the type of aggressive behavior inside the hospital and mean score of unit and environmental risk factors of aggression:

Type of aggressive behavior inside the hospital	N	unit and environmental risk factors	Test value	ANOVA test	
		Mean ± SD		F	P-value
Verbal	35	25.771 ± 1.592	F	0.571	0.636
Physical directed toward the self	6	26.667 ± 1.366			
Physical directed toward others	16	25.938 ± 1.731			
Physical directed toward the surrounding environment	4	26.250 ± 1.893			

**** Not statistically significant***

Table (16): This table reveals that there is no statistical significant relationship between unit and environmental risk factors and the type of aggressive behavior inside the hospital.

Table (17): Relationship between aggressive and violence behavior before entering the hospital and the socio-demographic Characteristics of studied patients and their families: **n = (80)**

Socio-demographic characteristics		History of violence before entering the hospital				Chi-square	
		Yes (n=42)		No (n=38)			
		N	%	N	%	X^2	P-value
Age	< 20 years	1	1.25	2	2.50	2.408	0.492
	20- <30	5	6.25	3	3.75		
	30- <40	10	12.50	14	17.50		
	40 - and more	26	32.50	19	23.75		
Gender	Male	24	30.00	26	32.50	1.088	0.297
	Female	18	22.50	12	15.00		
Marital status	Single	24	30.00	28	35.00	2.441	0.295
	Married	13	16.25	7	8.75		
	Divorced	5	6.25	3	3.75		
Education	Illiterate	12	15.00	14	17.50	2.712	0.438
	Primary education	7	8.75	10	12.50		
	Secondary education	16	20.00	10	12.50		
	University education	7	8.75	4	5.00		
Occupation	Employee	7	8.75	8	10.00	0.252	0.616
	Unemployed	35	43.75	30	37.50		
Income	Enough	9	11.25	19	23.75	7.424	0.024*
	Enough and save	1	1.25	1	1.25		
	Not enough	32	40.00	18	22.50		

Table (17):cont

Socio-demographic characteristics (cont)		History of violence before entering the hospital				Chi-square	
		Yes (n=42)		No (n=38)			
		N	%	N	%	X^2	P-value
Residence	Rural	31	38.75	28	35.00	0.000	0.990
	Urban	11	13.75	10	12.50		
Birth order	First	10	12.50	9	11.25	5.304	0.151
	Middle	20	25.00	14	17.50		
	The latter	10	12.50	7	8.75		
	The only	2	2.50	8	10.00		
Number of family members	< 3	1	1.25	0	0.00	1.477	0.478
	3-6	24	30.00	24	30.00		
	> 6	17	21.25	14	17.50		
Family blood relation	Yes	16	20.00	15	18.75	0.016	0.899
	No	26	32.50	23	28.75		
Family history of violent behavior	Yes	23	28.75	16	20.00	1.283	0.257
	No	19	23.75	22	27.50		

** Statistically significant*

Table (17): Illustrates relationship between aggressive and violence behavior before entering the hospital and the socio-demographic characteristics of studied patients and their families. This table reveals that there is only statistical significant relationship between the history of aggressive behavior before entering the hospital and family income at p-value 0.024.

Table (18): Relationship between aggressive and violence behavior inside the hospital and the socio-demographic characteristics of studied patients and their families:

Socio-demographic characteristics		History of aggressive behavior inside the hospital				Chi-square	
		Yes (n=61)		No (n=19)			
		N	%	N	%	X^2	P-value
Age	< 20 years	2	2.50	1	1.25	0.816	0.846
	20- <30	7	8.75	1	1.25		
	30- <40	18	22.50	6	7.50		
	40 - and more	34	42.50	11	13.75		
Gender	Male	38	47.50	12	15.00	0.005	0.946
	Female	23	28.75	7	8.75		
Marital status	Single	37	46.25	15	18.75	3.228	0.199
	Married	18	22.50	2	2.50		
	Divorced	6	7.50	2	2.50		
Education	Illiterate	19	23.75	7	8.75	2.124	0.547
	Primary education	13	16.25	4	5.00		
	Secondary education	22	27.50	4	5.00		
	University education	7	8.75	4	5.00		
Occupation	Employee	11	13.75	4	5.00	0.085	0.771
	Unemployed	50	62.50	15	18.75		
Family income	Enough	23	28.75	5	6.25	1.354	0.508
	Enough and save	1	1.25	1	1.25		
	Not enough	37	46.25	13	16.25		

Table (18): cont

Socio-demographic characteristics (cont)		History of aggressive behavior inside the hospital				Chi-square	
		Yes (n=61)		No (n=19)			
		N	%	N	%	X^2	P-value
Residence	Rural	45	56.25	14	17.50	0.000	0.994
	Urban	16	20.00	5	6.25		
Birth order	First	15	18.75	4	5.00	7.160	0.067
	Middle	28	35.00	6	7.50		
	The latter	14	17.50	3	3.75		
	The only	4	5.00	6	7.50		
Number of family members	< 3	1	1.25	0	0.00	10.479	0.005*
	3-6	31	38.75	17	21.25		
	> 6	29	36.25	2	2.50		
Family blood relation	Yes	22	27.50	9	11.25	0.769	0.381
	No	39	48.75	10	12.50		
Family history of violent behavior	Yes	34	42.50	5	6.25	5.194	0.023*
	No	27	33.75	14	17.50		

**** Statistically significant***

Table (18): Represents relationship between aggressive and violence behavior inside the hospital and the socio-demographic characteristics of studied patients and their families. This table shows that there is only statistical significant relationship between the history of aggressive behavior inside the hospital and the number of family members at p-value < 0.005 and also statistical significant difference between history of aggressive behavior inside the hospital and family history of violent behavior at p-value < 0.023. The higher percentage of aggressive patients is among age groups above 40 years, single, low income, unemployed, males and low education.

Table (19): Relationship between the clinical characteristics of studied patients and the history of aggressive behavior inside the hospital:

Clinical characteristics		History of aggressive behavior inside the hospital				Chi-square	
		Yes (n=61)		No (n=19)			
		N	%	N	%	X^2	P-value
Type of schizophrenia	Paranoid	20	25.00	9	11.25	7.026	0.071
	Chronic	29	36.25	3	3.75		
	Undifferentiated	11	13.75	6	7.50		
	Affective	1	1.25	1	1.25		
Length hospitalization	<1 year	9	11.25	2	2.50	2.587	0.629
	1 year - < 2 years	4	5.00	2	2.50		
	2 years - < 3 year	2	2.50	1	1.25		
	3-5 years	15	18.75	2	2.50		
	More years	31	38.75	12	15.00		
Mode of admission	Voluntary	9	11.25	6	7.50	2.466	0.116
	Involuntary	52	65.00	13	16.25		
History of presence of any head injuries	Yes	21	26.25	4	5.00	1.271	0.260
	No	40	50.00	15	18.75		
Smoking	Yes	49	61.25	14	17.50	0.369	0.544
	No	12	15.00	5	6.25		
Substances abuse	Yes	23	28.75	6	7.50	0.239	0.625
	No	38	47.50	13	16.25		
Drug incompliance	Yes	40	50.00	13	16.25	0.053	0.818
	No	21	26.25	6	7.50		

**** Not statistically significant***

Table (19): Represents relationship between the clinical characteristics of studied patients and the history of aggressive behavior inside the hospital. This table reveals that the higher percentage of aggressive behavior are among chronic cases, involuntary admitted cases, smoking ,patients with increased length of hospitalization and incompliance on medications with no statistical significant relationship between the history of aggressive behavior inside the hospital and the clinical characteristics items.

Table (20): Relationship between the clinical characteristics of studied patients and the type of aggressive behavior inside the hospital:

Clinical characteristics		Type of aggressive behavior (n=61)								Chi-square	
		Verbal (n=35)		physical directed toward the self (n=6)		Physical directed toward others (n=16)		physical directed towards the surrounding environment (n=4)			
		N	%	N	%	N	%	N	%	X^2	P-value
Type of schizophrenia	Paranoid	9	14.75	2	3.28	7	11.48	2	3.28	12.843	0.170
	Chronic	22	36.07	2	3.28	4	6.56	1	1.64		
	Undifferentiated	4	6.56	1	1.64	5	8.20	1	1.64		
	Affective	0	0.00	1	1.64	0	0.00	0	0.00		
Length of hospitalization	<1 year	6	9.84	0	0.00	2	3.28	1	1.64	16.746	0.159
	1 year - < 2 years	2	3.28	2	3.28	0	0.00	0	0.00		
	2 years - <3 year	1	1.64	0	0.00	1	1.64	0	0.00		
	3-5 years	8	13.11	1	1.64	3	4.92	3	4.92		
	More years	18	29.51	3	4.92	10	16.39	0	0.00		
Mode of admission	Voluntary	5	8.20	2	3.28	2	3.28	0	0.00	2.644	0.450
	Involuntary	30	49.18	4	6.56	14	22.95	4	6.56		
History of presence of any head injuries	Yes	13	21.31	4	6.56	2	3.28	2	3.28	7.127	0.068
	No	22	36.07	2	3.28	14	22.95	2	3.28		
Smoking	Yes	27	44.26	5	8.20	13	21.31	4	6.56	2.013	0.570
	No	8	13.11	1	1.64	3	4.92	0	0.00		

Table (20):cont

Clinical characteristics (cont)		Type of aggressive behavior (n=61)								Chi-square	
		Verbal (n=35)		physical directed toward the self (n=6)		Physical directed toward others (n=16)		physical directed towards the surrounding environment (n=4)			
		N	%	N	%	N	%	N	%	X^2	P-value
Substances abuse	Yes	13	21.31	2	3.28	5	8.20	3	4.92	2.646	0.449
	No	22	36.07	4	6.56	11	18.03	1	1.64		
Drug incompliance	Yes	22	36.07	3	4.92	11	18.03	4	6.56	4.174	0.243
	No	13	21.31	3	4.92	5	8.20	0	0.00		

**** Not statistically significant***

Table (20): Represents relationship between the clinical characteristics of studied patients and the type of aggressive behavior inside the hospital. It reveals that there is no statistical significant relationship between the type of aggressive behavior inside the hospital and clinical characteristics items. The most common form of aggressive behavior are verbal aggression which are higher among smoking group, substance abuse group, drug incompliance group, involuntary admission group, chronic cases and increased length of hospitalization more than five years.

Discussion

Aggression is a ubiquitous phenomenon in humans and inflects a costly burden onto society. Generally, aggression refers to any behavior that is hostile, injurious, or destructive and has the potential to inflict injury or damage to persons or objects. Studies confirm that schizophrenia is associated with increased risk for violence compared to the general population ***(Wehring & Carpenter, 2011)***. This has been demonstrated in general populations, in criminal and offender settings as well as in civil psychiatric patients ***(Bo et al., 2011)***.

Acts of aggression committed by psychiatric inpatients have severe negative consequences for the patients themselves, other patients, treating staff and the therapeutic milieu of the inpatient unit. Contributing factors associated with aggression can be broadly divided into patients 'illness factors, environmental factors, staff factors and staff patient dynamics. Due to the significant consequences of aggressive behavior, steps for prevention and treatment must be taken to mitigate these harmful effects. Understanding the risk factors for aggressive behavior is vital to effective prevention and intervention ***(Liu, 2013)***.

Therefore, the present study aimed to assess risk factors for aggressive and violence behavior among schizophrenic patients.

Regarding the socio-demographic characteristics of studied patients, the result of the present study revealed that, their mean age was 38.875+_ 8.189 years .The highest percentage of them which represented more than half were aged 40+years old. This finding was contradicting with ***Raja & Azzoni, (2005)*** who reported that aggression tended to be more common among young age of schizophrenic patients who were less than forty years. Moreover, ***Volavka, (2014); and Coid et al., (2013)*** reported that young age was a risk factor for violence in psychotic patients.

As regard the sex, the present study results showed that two thirds of studied patients were males. This may be due to male patients are usually carrying the burden of financial responsibility of the family; their illness makes them unable to take the responsibility of their families. This may lead to the development of guilt feelings which increase the stress and may lead to aggressive behavior. This result was in agreement with ***Lu & Jihui, (2010)*** who suggested that male patients pose a greater threat of aggression than female patients. In addition, ***Witt et al., (2013)*** reported that male gender was modestly associated with violence in psychotic patients.

In contrast to that, ***Soliman et al., (2007)*** mentioned that, female inpatients committed significantly more aggressive behavior than patients but males were much more likely to cause injury. ***Dack et al., (2013***) found that the male sex was not strongly associated with violence at an individual patient level. ***Scott& Resnick, (2006)*** claimed that aggressive behavior for psychiatric patients was equal for both sexes because there were appropriate placements for aggression.

The present study revealed that, two thirds of studied patients were illiterate. This might be due to the fact that the lower educational achievement was found to be correlated with low socioeconomic classes. Also, the illiteracy makes patients don't have interest to know and learn information about their psychiatric illness which consequently cause noncompliance to psychiatric treatment that may lead to aggression. This result was consistent with ***Soliman et al., (2007)*** who confirmed an association between lower educational level and aggression.

Concerning patients' marital status, the results indicated that two thirds of studied patients were single. This might be due to the early onset of the illness with disruption at the time when they are developing their social skills and the lack of social support which could be conducive to aggression. Single marital status in patients with schizophrenia has been linked to various clinical characteristics, such as hospitalization, suicidality and depression which may lead to violence. This result was congruent with ***El-Genadi, (2009)*** who reported that the most of the patients who committed aggressive behavior were unmarried. Moreover, ***Raja & Azzoni, (2005)*** had claimed that, single and no having children were risk factors associated with aggression.

Concerning patient's occupation, the present study showed that, the majority of studied patients were unemployed. This probably because schizophrenia has significant effect on the person's ability to acquire job skills and to resume his former occupation once he secured a job. Moreover, this make patient dependent on their families because of decreasing income that lowering their self-esteem and make them feel that they have no purpose in their life, which results in increasing client's anxiety that may contribute to the emergent of aggression. This result was

in agreement with ***Antai-Otong, (2008); Mohr, (2009)*** who reported that unemployment was one of the socio-demographic variables that correlate to violence. In addition, ***Scott &Resnick, (2006)*** stated that aggression is more common amongst people who have had many short periods of employment.

Regarding patients' residence, the current study indicated that, three quarters of studied patients were from rural areas. This may be due to the lack of the delivery of mental health services in rural areas or it may be due to the fact that rural areas had low socioeconomic status which in turn might have resulted in them not being able to access medical aid and an increased rate of violence. Also, may be due to the fact that rural patients may be more likely to be separated from family and other social support networks when hospitalized which could increase the rate of violence among rural patients. This study result was consistent with ***El-Genadi, (2009)*** who reported that patients from rural areas were more likely than those from urban areas to be aggressive and destructive. In contrast to that, ***Selim, (2006***) stated that the risk of violence was mainly attributed to urban patients.

The present study reported that, nearly half of studied patients had family history of violent behavior. This may be due to that family violence causes Psychological and behavioral disorders, resulting in: poor self- confidence, and with others, feeling of depression, sadness, frustration, a sense of powerlessness, helplessness, the feeling of insecurity and fear. These results lead to psychological issues that may develop into hostile or criminal behaviors. This result was in parallel with ***Van Dorn et al., (2013)*** who reported that violence was moderately associated with reporting parental history of criminal involvement.

Regarding the clinical characteristics of studied patients, the present study indicated that, the majority of them were involuntary admitted to hospital. This might be due to schizophrenic patients don't have enough insight about their condition and severity of their symptoms that appear before hospital admission which make their families admit them involuntary to hospital. Moreover, the process of involuntary admission and detention in a locked ward can amplify the patient's hostility and propensity to violence, especially if they do not realize the need for treatment. Aggression may be a consequences as well as a cause of involuntary admission.

This finding was supported by ***Ketelsen et al., (2007); and Large et al., (2008)*** who reported that involuntary admission to the hospital was associated with an increased risk of aggression. In addition, ***Daffern et al., (2007)*** found that, violent patients were more likely to have been admitted involuntary to a locked unit. While, ***Change & Lee, (2004)*** reported that voluntary admitted patients predominated the number of aggressors and incidents when compared to police and out patients' clinic referred aggressors.

The present study indicated that, more than one third of studied patients had paranoid schizophrenia. This could illustrate the risk of violence. As patients with paranoid schizophrenia retain sufficient ability to plan and commit acts of violence related to their delusions and may react to these persecutory delusions by retaliating against the presumed source of the persecution and using of violence to get rid of these delusional ideas. This finding was consistent with ***Belli &Ural, (2012)*** who reported that paranoid subtype increase the potential for violence episodes. In addition, ***Umut et al., (2012)*** reported that patients with

paranoid schizophrenia were more prone to demonstrate violence than other patients with other sub-types of schizophrenia.

The present study revealed that, more than half of studied patients had long stay of hospitalization. This may be due to nature of schizophrenia that is characterized by frequent relapsing that requires hospitalization. It has multiple personal, social, vocational and financial consequences. Patients lose the familiarity of their usual lives during hospitalization; these negative consequences may lead to aggressive behaviors. This result was consistent with ***Raja & Azzoni, (2005)*** who reported that aggression was correlated with a prolonged hospital stay.

The present study showed that, the majority of studied patients were smokers. This is probably because there was poor mother child relation and the lack of satisfaction of oral phase of the development in early childhood. Accordingly, ***Allen et al., (2011)*** most of schizophrenic patients who regularly smoke present a nicotine withdrawal syndrome during hospitalization. Acute nicotine deprivation and withdrawal in smokers increase aggressive behavior and this effect is more pronounced in individuals with higher baseline irritability or hostility.

The present study indicated that, one third of studied patients had a history of head injury. This study result was supported by ***Amore et al., (2008)*** who reported that a past history of head injury with loss of consciousness was more frequent among persistently physically aggressive patients. It is probable that head injury makes the risk of serious violence higher on the basis of post-traumatic brain damage or posttraumatic personality changes.

In addition, the current study highlighted that, more than one third of studied patients had a history of substance abuse. Substance abuse may be increase the risk of aggression due to it may cause the exacerbation of psychotic symptoms particularly hallucination and paranoid delusions and it may be result in disinhibition, which in turn foster aggression. As well, it might be due to the fact that alcohol diminishes brain mechanisms that control impulsive behavior. Alcohol also reduces the thought patterns of an individual, which in turn may lead to misperceived social clues, and overreaction to perceived threats.

This result was supported by ***Elbogen & Johnson, (2009)*** who reported that substance abuse plays a major role in the occurrence of violence among patients with schizophrenia. In addition, ***Villano et al., (2009)*** found that a history of substance abuse was associated with increased risk for inpatient aggression. Also, ***Belli &Ural, (2012)*** suggest that substance abuse was increase the potential for violence episodes, and ***Volavka &Swanson, (2010)*** reported that substance abuse was a very important risk factor for violence in schizophrenia.

The present study also indicated that, one third of studied patients were incompliant on medication. This could be due to lack of knowledge about the importance of compliance on medication and relapse prevention. This result was consistent with ***Volavka, (2014)*** who reported that non-adherence has been associated with symptom worsening, including aggressive behavior. In addition, ***Witt et al., (2013)*** found that non-adherence with medication was modestly associated with violence.

Concerning the history of aggressive and violence behavior before entering the hospital, the current study finding reported that more than half of studied patients had a previous history before entering the hospital. In this respect, ***Volavka, (2014)*** had claimed that, past violence is one of the strongest predictors of future violence. In addition, ***Fazel et al., (2013)*** found that Violence was strongly associated with a history of being violently victimized. In contrast to that, ***Iozzino et al., (2015)*** reported that more than one third of the studied sample explained by lifetime history of violence.

Concerning the history of committing aggressive and violence behavior inside the hospital, the current study finding reported that the majority of studied patients had a history of previous aggressive episodes. This is probably because patients believe that aggressive behavior is justified and if they are aggressive, they can take their rights and can master the situation. Also, low self-esteem that may be eroded during hospitalization may influence patients to use force to meet their needs. Additionally, patients may become aggressive because of frustrating circumstances beyond their control. They displace the frustration and anger to family, other patients and staff members or could be due to symptoms of his illness .This result was consistent with ***El-Badri &Mellsop, (2006);and El-Genadi, (2009)*** who stated that aggressive patients were more likely to have a history of previous aggression and violence.

As regard the type of aggressive behavior committed by studied patients, the present study postulated that, more than half of them exhibited verbal aggression. This result was in line with ***Stewart&Bowers, (2013),*** who reported that verbal aggression was more

common than other types of aggression, In contrast to that, ***Wahba, (2010)*** reported that the most common types of aggression were physical aggression against others followed by verbal aggression.

Regarding relationship between the socio-demographic characteristics of studied patients and the history of violence before entering the hospital, the findings of current study demonstrated that there was statistically significant relationship between the history of violence before entering the hospital and their income as not enough. This is probably because the most of studied sample were illiterate and not working. In addition, patients on lower incomes are more likely to have stresses and tensions which also increases propensity for substance misuse leading to increase in aggression and violence. Or families living in poverty experience greater stress, and have fewer resources at their disposal to provide them with recreational and other activities have increased likelihood of developing behavior problems.

Regarding relationship between the socio-demographic characteristics of studied patients and the history of violence inside the hospital, the finding of current study demonstrated that there was no statistically significant difference between the history of violence inside the hospital and their socio-demographic characteristics in relation to age, sex, level of education, marital status, occupation and residence. This result was consistent with ***Wahba, (2010)*** who reported that there was no statistically significant difference between the studied patients' committing of aggression in the hospital and their socio-demographic characteristics in relation to age, sex, level of education, marital status, occupation and residence. In contrast to that, ***Meenu, (2009)*** reported that there was statistically significant relationship between age, gender and

aggression and violence inside the hospital as (p-value<0.001).This could be due to difference in sample size or culture.

In addition, the finding of this study revealed that there was statistically significant difference between the history of violence inside the hospital and family history of violence. This could be occurred from the family as unhealthy behavior habits. This result was in parallel with ***Fazel et al., (2009)*** who reported that Parental violent crime was moderately associated with convictions for violent crime in patients with schizophrenia.

Regarding relationship between the clinical characteristics of studied patients and the history of violence inside the hospital, the finding of current study demonstrated that there was no statistically significant difference between the history of violence inside the hospital and their clinical characteristics in relation to length of hospitalization, mode of admission, smoking, and substance abuse. This result was consistent with ***Wahba, (2010)*** who reported that there was no statistically significant difference between the studied patients' committing of aggression in the hospital and their clinical characteristics in relation to length of hospitalization, mode of admission, smoking, substance abuse.

As well, the findings of current study demonstrated that there was no statistically significant difference between the history of violence inside the hospital and their clinical characteristics in relation to drug compliance. In contrast to that, ***Ascher-Svanum et al., (2006)*** reported that a history of aggressive behavior was strongly related to non-adherence to treatment in schizophrenia patients.

Considering relationship between the clinical characteristics and the type of aggression, the result of this study revealed that there was no statistical significant relationship between verbal aggressive behavior inside the hospital and the clinical characteristics in relation to substance abuse. This result was in parallel with ***Stewart&Bowers, (2013)***who reported that there was no significant relationship between verbal aggression and substance abuse at ($p<0.05$).

Concerning static risk factors of aggressive behavior, the current study indicated that, more than half of studied patients reported that they were exposed to physical abuse in childhood, cruelty and neglect from parents. This is probably because severe physical Punishment of the child makes him/her aggressive in later life because he/she learns that physical punishment is the solution to the problems between people and it is legitimate in the dealing between people. On the other side, the Permissiveness of the parents towards the child's aggressive behavior make it indulges in that behavior, so that severe punishment and severe pampering can lead to aggressive behavior.

This result was consistent with ***Witt et al., (2013)*** who reported that Childhood physical abuse was moderately associated with violence. In addition, ***Spidel et al., (2010)*** reported that the patients who had a history of child abuse were being more likely to be violent in later life. Also, ***Bennouna-Greene et al., (2011)*** reported that schizophrenia patients with a history of violence had experienced child abuse and/or neglect. However, ***Silva et al., (2012); and Kolla et al., (2013)*** found the association between childhood maltreatment and adult criminal violence in individuals without schizophrenia.

The present study also indicated that, about three quarters of studied patients had felt frustration due to inability to solve their problems and they were exposed to a lot of stress in life. This might be due to the lack of control when a person's environment becomes crowded, resources may scare, and activities of one person may interfere with the activities of another person, it may distract or prevent the individual from attaining his or her personal goals and may contribute to the formation of anger and the individual become more likely to act aggression. Frustration has also led to aggression by unexpected blocking of goals and it is most likely to lead to aggression when the individual's emotional experiences are interpreted as negative.

In this respect, ***Marshall & Andrew, (2012)*** stated that inability to articulate goals, solve problems or communicate intentions can lead to frustrations and, if unchecked, to aggression. In addition, ***Arnold& Marshall, (2013)*** stated that a stress model has to include an accounting of pressure and frustration factors that might lead to aggression. Aggression will be the reaction of frustration and stress when social support systems fail or malfunction.

In addition, the present study showed that, nearly half of studied patients committed violence acts at an earlier age and they had tried to commit suicide during life. This result was in agreement with ***Fazel et al., (2013)*** who found that violence was moderately associated with a history of previous suicide attempts. ***Turgut et al., (2006)*** stated that the age of the first serious aggressive behavior was also found to be significant factor, commitment of serious violent act at earlier age is inversely correlated with future risk and the number of violent offences is positively correlated with future violent episodes.

Concerning clinical and dynamic risk factors of aggressive behavior, the current study demonstrated that, the majority of studied patients reported their desire to leave the hospital and they feel insecurity in the hospital. This may be because schizophrenic patients don't have insight about their illness and they become aggressive due to their feeling of fear and anxiety. Also, fears along with the feelings of insecurity of the other patients in the ward, led to angry outbursts and disruptive behavior this may because some patients are dangerous and unpredictable this made the patient feel unsafe.

The present study also indicated that, more than half of studied patients reported that they did not have a psychiatric illness. In this respect, ***Fazel et al., (2013)*** found that lack of insight was moderately associated with violence. In addition, ***Calatayud, et al., (2012)*** hypothesized that lack of insight was the primary problem, leading to increased higher hostility and impaired impulse control. This may be due to patients with schizophrenia deny that they have a mental disorder. Moreover, partial or total impairment of insight in patients with schizophrenia diminishes treatment adherence which may associated with violence.

In addition, the current study revealed that, more than half of studied patients reported that they were hear voices that order them to make aggressive things. This is probably due to commanding hallucination urging the patients to compel and the patients may become aggressively in response to get rid of the over demanding voices. Commanding hallucination give rise to patient, conflicting two worlds, one which involves very real and the other vague and the compliance with such commands alleviates the frustration. In this respect, ***Volavka,***

(2014) reported that command hallucinations to harm others may increase risk of violence. According to ***Selim, (2006); and Smith et al., (2006***) among the types of auditory hallucinations, commenting hallucinations were the most frequently encountered types of auditory hallucination to be associated with aggression. In contrast to that, ***(Lee et al., 2004)*** found that command hallucination did not associate with aggression, when the content of commanding hallucinations are not violent the patients will not be motivated to act aggressively.

The present study also indicated that, half of studied patients reported that they think that there were some persons intend to harm them. This result was consistent with ***Volavka, (2014)*** who reported that a group of delusional psychotic symptoms so-called threat/control (TCO) symptoms was reported to lead to violence. Also, ***Jeremy, (2013)*** demonstrated that persecutory delusions were marked by negative affect and propensity to act, and that patient who acted violently were more likely to report that delusions made them angry.

As well, the present study showed that, one third of studied patients see things around them that pushed them to violence (visual hallucination) .This result was consistent with ***Abd EL-Rahman, (2011)*** who stated that visual hallucinations are associated with aggression. This is probably may be because the content of visual hallucination may include persecutory, threatening and fear.

Concerning staff related factors of aggressive behavior, the present study postulated that, around more than half of studied patients reported that the staff were forced them to take medication, to sleep and to not smoke. This may be due to ineffective interaction between staff and patients can contribute to frustration to patients and may enhance

aggressive behavior. This result was consistent with ***Michelle et al., (2010)*** who reported that forcing patients to take medications, go to bed and taking things from patients such as cigarettes are causative factors that can trigger patients' violence.

In addition, the present study indicated that, more than half of studied patients reported that the staff didn't give them the needed information they want about their condition. This result was consistent with ***El- Genadi, (2009)*** who reported that communication style of staff predispose the incidence of aggression. Furthermore, ***Foster et al., (2007)*** stated that, badly staffed wards can act to increase patients' fear due to problematic communication between staff members and encountering obstacles in obtaining information from the staff, all of which are inductive to inpatients' aggression. It could be due to lack of staff's knowledge about management of schizophrenic patients.

Also, more than one quarter of studied patients reported that the staff deliberately provoked their anger. This result was consistent with ***Stuart & Laraia, (2005)*** who stated that staff who are authoritarian and inflexible in their approach to patients are also more likely to provoke aggressive behavior. In addition, ***Ferns, (2007)*** who reported that many assaultive patients views on their victims as provoking the attack. He stated that a primary factor of provocation is limit setting. Violence is common response to limit setting. This may be due to failing to set effective limits consistently may lead to provocation and aggression as moving patients to another area and isolated them, taking things away from patients and placing limits on eating foods or drinking.

The present study indicated that, more two thirds of studied patients reported that the staff gave them orders repeatedly or many questions. This result was consistent with ***Chapman et al., (2009)*** who stated that staff attitudes can trigger patients' violence as controlling of the patients by repeated ordering and questioning of them.

Also, nearly one third of studied patients reported that they had a personal problem between them and the health team. This result was consistent with ***Dickens et al., (2013)*** who suggests a problematic relationship between the staff and patients can lead to aggressive behavior. This may be due to the perception that the staff is not listening or understanding patients' concerns affect patient behavior.

The present study indicated that, less than one quarter of the patients reported that there was no nursing staff available around them continuously. This result was consistent with ***Bowers et al., (2007)*** who reported that lack of staff availability (and/or lack of adequate staffing levels) was associated with the incidence of violence.

Concerning environmental related factors of aggressive behavior, the present study postulated that, the majority of the patients reported that the door was closed constantly. The thing that indicated that aggression is higher in locked wards when compared to the non-locked wards. This might be due to locked wards certainly limiting the patients' freedom in moving inside the hospital, as well as an overly controlled environment, such as excessive or unfair restriction of rights and privileges. In this respect, ***Berg, (2012); Bowers et al., (2009); and Foster et al., (2007***) reported that locked doors and rules and regulation restricting patients' behavior and diminishing patients' autonomy and sense of liberty often result in agitation and aggressive behavior.

In addition, the present study demonstrated that, more than two thirds of patients reported that there was noise in the ward and there was no privacy available for them. This might be due to crowding or noise created by the loud voices of the staff directed to each other or directed to the patients when calling or ordering them and also resulted from patients' fights. This result was consistent with ***Antai-Otong, (2008)*** who stated that an excessive stimuli and noise played an important role in arousal of aggression and noise accompanied over half of the aggressive incidents. Also, this result was consistent with ***Berg, (2012); Bowers et al., (2009); and Hamrin et al., (2009)*** who reported that lack of privacy has been reported to contribute to aggressive behaviors.

As well, the present study revealed that, less than two thirds of studied patients reported that there was too crowding, there were no entertaining and interesting activities in the ward and there were no means of communication with their families. This result was consistent with ***Wahba, (2010)*** who reported that crowding on psychiatric units was associated with aggressive incidents, and in particular with verbal aggression. Also, she reported that inaccessibility of communication means with family was the highest causative factor for inpatients' aggression. This may be due to inflexible rules and routines of the hospital.

In the same line, ***Bowers et al., (2009); and Hamrin et al., (2009)*** reported that limited space has been reported to contribute to aggressive behaviors. This might be due to the lack of personal space and the disruption of everyday activities caused by crowding may exacerbate stress, which may in turn enhance aggression. Also, this result was consistent with ***Keltner et al., (2007)*** who stated that the lack of

structured and unstructured diversionary activities such as movies, games, cards, calming music, television and recreational activities might lead to disruptive behavior.

Conclusion

Based on the results of this study, the following conclusions were formulated:

There were many risk factors that can lead to aggressive and violence behavior among schizophrenic patients. These factors were static risk factors as exposure to physical abuse in childhood, cruelty and neglecting from parents, personal losses during their life, feeling of that there was difference in the relation at home, feeling of frustration due to inability to solve problems and exposure to a lot of stress in their life.

Clinical and dynamic risk factors as feeling of unsecure in the hospital, lack of insight, (Auditory hallucination) hearing voices order the patients to make aggressive things, (Persecutory delusion) thinking that there were some persons intend to do something bad for them, Seeing things around them that pushed them to violence and they had aggressive thoughts that control them.

Staff related factors as the health team didn’t give the patients information they want about their condition, they forced the patients not to smoke, forced the patients to take medication, they deliberately provoked the patients' anger and isolated them tying in bed in a single room, they were inconsistent in dealing with the patients and they gave them orders repeatedly.

Unit and environmental related factors as there was noise in the ward, there was lack of privacy available for the patients, there was too crowding in the ward, there were no entertaining and interesting activities, there were

no means of communication with their families, the food was not served to the patients on time and they were not allowed getting out for visit.

There was significant relationship between family history of violence and aggressive behavior. The higher percentage of aggressive patients was among age groups above 40 years, single, low income, unemployed, males and low education. Also, aggression was higher among smoking patients, involuntary admission, chronic cases, noncompliance on medication and increased length of hospitalization.

Recommendations

Based on the findings and conclusions of this study, the following recommendations are suggested:-

- A system for accurate monitoring of inpatients' aggression and violence should be established in the psychiatric hospitals.
- Maintaining therapeutic nurse patient relationship with emphasis on expressing the feelings , giving the information needed by the patients about their condition , involving them in making decisions regarding treatment planning and not forcing them to take medications.
- Maintaining a constructive and therapeutic hospital environment to decrease the potential for aggressive behavior and violence by reducing noise , overcrowding , keeping privacy , maintaining safety for the patients , providing entertaining and interesting activities and focus on that they have the right to communicate with their families through direct phone contact.
- In-service Training program and workshops need to be implemented for hospital staff members in prediction and prevention of aggression.
- More attention should be paid to teach the patients problem solving skills, anger management and how to cope with their stress and frustration to enable them to manage anger or aggression in a constructive way.
- Teaching the patients about their illness, symptoms and medications will be more effective.

- Raising public awareness through the media (especially TV) should be conducted to stress that the physical abuse in childhood period and parenting style as exposure to cruelty and differences in the relation by parents are considered as risk factors for future violence and should be avoided.

- The need for further future researches on the causative factors of violence and aggressive behavior in schizophrenic patients and further studies on possible ways to prevent and treat the phenomenon of aggression.

Summary

Aggression in the health care settings is a well evidenced dilemma and constitutes a very significant area for nursing researches. A potential for violence exists in any health care settings. The risk is greater in psychiatric mental health care facilities .Acts of aggression committed by patients with schizophrenia is a major public health concern affecting patients, their families, treating clinicians as well as the community at large. The patient's aggression can provoke negative effects on health care staff's psychological and physical wellbeing, on their job motivation, and the quality of care they offer. Understanding factors contributing to violence and appropriately developing a risk management plan to address those factors will hopefully contribute to further eliminating stigma and other obstacles confronting psychiatric patients, helping them to achieve a good quality of life and independence in the community.

This study aimed to assess risk factors for aggressive and violence behavior among schizophrenic patients.

The study was done at Psychiatric Mental Health Hospital in Benha City, which is affiliated to the General Secretariat. The subject included 80 schizophrenic patients (50 male and 30 female). The target population of this study consisted of convenience patients who fulfilled the following inclusion and exclusion criteria:

Inclusion criteria: a - Both sex.

b -Agree to participate in the study.

c - Schizophrenic inpatient in residual phase.

Exclusion criteria: -Schizophrenic comorbidity

To collect data of the study, the following tools were used:-

Tool One: Interview questionnaire sheet was developed by the researcher that included the following parts: **Appendix (I)**

Part A: It consisted of 11 items to elicit data about the socio demographic characteristics of studied patients and their families such as age, sex, birth order, level of education, marital status, occupation , place of residence, family income, number of family members, family blood relation and family history of violent behavior.

Part B: It consisted of 7 items that assess the clinical characteristics of studied patients such as schizophrenic subtype, length of hospitalization, mode of admission, history of head injury, smoking, history of substance abuse and compliance on psychiatric medications.

Part C: It consisted of 4 questions regarding previous history of violence before entering the hospital and the history of committing violence inside the hospital, numbers and forms of it.

Tool Two: **Appendix (I)** Interview questionnaire sheet was developed and validated by the researcher in the form of likart scale to assess patients' risk factors for aggression, it consisted of 47 items in the form of three point likart scale each item has a set of three levels Yes, No and Unknown. The items "Yes" take score 3, the items "No" take score 2, and the items "Unknown" take score 1. It divided into 4 subscale (14) items to measure static risk factors about committing violence at an earlier age, exposure to physical abuse in childhood, any problems between patient and his family led to violence, any problems during the study period …….etc , (9) items to measure dynamic and clinical risk factors about patient's insight of his disease, hearing any voices that order the patient to

make any aggressive things, seeing things that push the patient to violence…….etc, (14) items to measure staff related factors about listening of health team to the patient when he in need, giving the patient the information if he want about his condition, isolating the patient in a single room, suffering from carelessness and delaying in providing medical care…….etc and (10) items to measure unit and environmental factors as crowding, noise, poor ventilation and lack of cleanliness in the ward, availability of privacy for the patient, availability of daily supplies of drugs or meals…….etc.

The findings of the study can be summarized in the following:

- According to the socio-demographic characteristics of studied patients, the findings pointed out that around two thirds of them were males and single (65% &62.5% respectively).

- According to the clinical characteristics of studied patients, the findings revealed that the majority of them were involuntary admitted to hospital (81.25%) and more than three quarters of them (78.75%) were smokers.

- Concerning the history of violence before entering the hospital and inside the hospital of studied patients, the findings revealed that most of patients namely 76.25% had a previous history of committing aggression during their hospitalization and more than half of them 57.3% exhibited verbal aggression.

- Concerning static risk factors for aggressive behavior of studied patients, the findings demonstrated that more than half of them had been exposed to physical abuse in childhood, cruelty and neglect from parents.

- Concerning clinical and dynamic risk factors of aggressive and violence behavior of the studied patients, the findings illustrated that more than half of them (56.25%, 56.25% respectively) had lack of (insight) regarding their illness and had (delusion of persecution). Half of them (50.0%) reported that they were hearing voices (auditory hallucination) that order them to make aggressive things.

- Concerning staff risk factors of aggressive and violence behavior of studied patients, the findings illustrated that more than half of the patients reported that the health team didn't give them the information they want about their condition and that they forced them not to smoke (56.25%&53.75% respectively).

- Concerning unit and environmental risk factors of aggressive and violence behavior of the studied patients, the findings illustrated that the majority of them (88.75%) reported that the door of the ward was closed constantly. Less than two thirds of them reported that there was too crowding in the ward, there were no entertaining and interesting activities and there were no means of communication with their families (61.25%&62.50% respectively).

- In relation to the socio-demographic characteristics items, the findings revealed that there was only statistical significant relationship between the history of aggressive behavior before entering the hospital and the family income.

- In relation to the socio-demographic characteristics items, the findings revealed that there was statistical significant relationship between the history of aggressive behavior inside the hospital and the number of family members and also there was statistical significant relationship

between the history of aggressive behavior inside the hospital and family history of violent behavior.

- In relation to the clinical characteristics items, the findings revealed that there was no statistical significant relationship between the history of aggressive behavior inside the hospital and the clinical characteristics items.

- In relation to the clinical characteristics items, the findings revealed that there was no statistical significant relationship between the type of aggressive behavior inside the hospital and the clinical characteristics items.

Recommendations:

Based on the findings and conclusion of this study, the following recommendations are suggested:-

- A system for accurate monitoring of inpatients' aggression and violence should be established in the psychiatric hospitals.

- Maintaining a constructive and therapeutic hospital environment to decrease the potential for aggressive behavior and violence by reducing noise, overcrowding, keeping privacy and maintaining safety for the patients.

- More attention should be paid to teach patients problem solving skills, anger management and how to cope with their stress and frustration to enable them to manage anger or aggression in a constructive way.

- In-service Training programs and workshops need to be implemented for hospital staff members in prediction and prevention of aggressive and violence behavior.
- The need for further future researches on the causative factors of violence and aggressive behavior in schizophrenic patients and further studies on possible ways to prevent and treat the phenomenon of aggression.

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الملخص العربي

العوامل المنذرة للسلوك العدواني والعنف بين مرضى الفصام

المقدمة:

العدوان في أماكن الرعاية الصحية هو معضلة واضحة جدا ويمثل نقطة مهمة جدا للأبحاث التمريضية .وإحتمالات العنف موجوة في أي من أماكن الرعاية الصحية .والخطر يكون أكبر في أماكن الرعاية الصحية العقلية و النفسية. أعمال العدوان التي يرتكبها مرضى الفصام تمثل إهتمام كبيرفي مجال الصحة العامة فإنها تؤثر على المرضى وأسرهم، و الأطباء المعالجين والمجتمع ككل .عدوان المريض يمكن أن يحدث آثار سلبية على الفريق الصحي نفسيا وجسمانيا، وعلى دافع العمل لديهم، وعلى جودة الرعاية المقدمة .فهم العوامل التي تساهم في حدوث العنف ووضع خطة متطورة و بشكل مناسب لإدارة المخاطر للتصدي لتلك العوامل سوف تساهم أملا في المزيد من القضاء على الوصمة وغيرها من العقبات التي تواجه المرضى النفسيين، ومساعدتهم لتحقيق نوعية جيدة من الحياة والاستقلال في المجتمع.

هدف الدراسة:

تهدف هذه الدراسة إلى تقييم العوامل المنذرة لسلوك العدوان والعنف بين مرضى الفصام.

سؤال البحث:

ما هى العوامل المنذرة لسلوك العدواني والعنف بين مرضى الفصام.

منهجية الدراسة:

تم إجراء هذه الدراسة في مستشفى الصحة النفسية والعقلية بمدينة بنها، التابعة للأمانة العامة .وشملت هذه الدراسة على عدد 80 من مرضى الفصام 50من الذكور و 30 من الإناث .

تكونت العينة المستهدفة للدراسة من المرضى المختارين وفقا لمعاييرالإشتمال والإستبعاد التالية:

معايير الإشتمال :أ -كلا من الجنسين.

ب- الموافقة على المشاركة في الدراسة.

ج - يكون مريض الفصام في المرحلة المتبقية.

معايير الإستبعاد :- فصام مع إضطرابات أخرى.

تم جمع بيانات هذه الدراسة بإستخدام الأدوات التالية:

الأداة الأولى: إستمارة إستبيان منظمة للمقابلة وتتكون من ثلاثة أجزاء :

جزء(أ): يتكون من 11عنصر لجمع بيانات عن الخصائص الديموجرافية الإجتماعية للمرضى الخاضعين للدراسة وأسرهم مثل العمر ،الجنس ،ترتيب الميلاد، مستوى التعليم ،الحالة الإجتماعية ،الوظيفة ،مكان الإقامة، دخل الأسرة، عدد أفراد الأسرة، صلة القرابة بين الأب والأم والتاريخ العائلي لسلوك العنف.

جزء (ب) : يتكون من 7عناصر لتقييم الخصائص الإكلينكية للمرضى الخاضعين للدراسة مثل نوع الفصام، مدة البقاء في المستشفى، طريقة الدخول، تاريخ إي إصابات في الرأس، التدخين، تاريخ تعاطي إي مواد مخدرة.

جزء (ج): يتكون من 4 أسئلة عن التاريخ السابق للعنف قبل دخول المستشفى ، و داخل المستشفى ،عدد مراته ونوعه.

الأداة الثانية: ورقة إستبيان للمقابلة تم تصميمها والتحقق من صحتها من قبل الباحث في شكل مقياس ليكرت لتقييم العوامل المنذرة لعدوان المرضى. و تتكون من 47 عنصر في شكل ثلاث نقاط من مقياس ليكرت كل عنصر يحتوي على مجموعة من ثلاثة مستويات نعم، لا ،ولا أعرف. العنصر "نعم" يأخذ درجة 3، العنصر "لا" يأخذ درحة 2، والعنصر "لا أعرف" يأخذ درجة 1. و تنقسم إلى 4 فروع جانبية (14) عنصر لقياس عوامل الخطر الثابتة عن إرتكاب العنف في سن مبكر، التعرض للإعتداء الجسدي في مرحلة الطفولة، أي مشاكل بين المريض وأسرته أدت إلى العنف، أي مشاكل أثناء فترة الدراسة ..... .الخ، (9) عناصر لقياس عوامل الخطر الدينامكية والإكلنيكية عن بصيرة المريض بمرضه، سماع أي أصوات تأمر المريض لفعل أي أشياء عدوانية، ورؤية الأشياء التي تدفع المريض إلى العنف ..... .الخ، (14) عناصر لقياس العوامل المتعلقة بالفريق الصحي عن سماع الفريق الصحي للمريض عند الحاجة، إعطاء المريض

المعلومات عن حالته، عزل المريض في غرفة منفردة، والمعاناة من الإهمال والتأخير في توفير الرعاية الطبية ..... .الخ و (10) عناصر لقياس العوامل المتعلقة بالبيئة ووحدة المستشفى مثل الإزدحام، الضوضاء ،سوء التهوية و عدم النظافة بالقسم ،توفر الخصوصية للمريض، وتوافر المستلزمات اليومية من الأدوية أو الوجبات ..... .الخ.

نتائج الدراسة يمكن تلخيصها في ما يلي:

- ❖ وفقا للبيانات الإجتماعية والديمجرافية للمرضى الخاضعين للدراسة فقد أشارت النتائج بأن نحو الثلثي منهم كانوا من الذكور و غير متزوجين (65٪ و 62.5٪) على التوالي.
- ❖ وفقا للبيانات الأكلينيكية، أظهرت النتائج أن أغلبية المرضى الخاضعين للدراسة تم دخولهم لا إراديا للمستشفى (81.25٪)، وأكثر من ثلاثة أرباعهم (78.75%) كانوا مدخنين.
- ❖ فيما يتعلق بتاريخ العنف قبل الدخول للمستشفى وداخل المستشفى ، أظهرت النتائج أن معظم المرضى الخاضعين للدراسة 76.25٪ لديهم تاريخ سابق للعدوان في المستشفى، وأكثر من نصفهم 57.3٪ أظهرت العدوان اللفظي.
- ❖ فيما يتعلق بعوامل الخطر الثابتة للسلوك العدواني للمرضى الخاضعين للدراسة، أظهرت النتائج أن أكثر من نصفهم تعرضوا للإعتداء الجسدي في مرحلة الطفولة والقسوة والإهمال من الآباء والأمهات.
- ❖ فيما يتعلق بعوامل الخطر الإكلينيكية والديناميكية لسلوك العدوان والعنف للمرضى الخاضعين للدراسة،أظهرت النتائج أن أكثر من نصفهم (56.25٪، 56.25٪) على التوالي أقروا بأن ليس لديهم مرضا نفسيا (البصيرة) وأنهم كانوا يعتقدون أن هناك بعض الأشخاص تنوي أن تفعل شيئا سيئا لهم (ضلالات الإضطهاد) . وأفاد نصفهم (50.0٪) أنهم كانوا يسمعون أصوات (هلوسة سمعية) تأمرهم بفعل الأشياء العدوانية.
- ❖ فيما يتعلق بعوامل الخطر المتعلقة بالفريق الصحي لسلوك العدوان والعنف للمرضى الخاضعين للدراسة، النتائج أظهرت أن أكثر من نصفهم أقروا أن الفريق الصحي لم

يعطي لهم المعلومات التي يريدوها عن حالتهم، وأنه يجبرهم على عدم التدخين (56.25٪ &53.75 ٪)على التوالي.

- ❖ فيما يتعلق بالعوامل المتعلقة ببيئة ووحدة المستشفى لسلوك العدوان والعنف للمرضى الخاضعين للدراسة، النتائج أظهرت أن الغالبية منهم (88.75٪) أفادت بأن باب القسم مغلق بإستمرار . أقل من ثلثهم أقروا بوجود إزدحام شديد في القسم، لا توجد أي أنشطة مسلية ومثيرة للإهتمام وليس هناك وسيلة إتصال بأسرهم (61.25٪ &62.50٪) على التوالي.
- ❖ فيما يتعلق بالعلاقة بين الخصائص الاجتماعية والديموجرافية وتاريخ السلوك العدواني قبل دخول المستشفى، أظهرت النتائج أن هناك فقط علاقة ذات دلالة إحصائية بين تاريخ السلوك العدواني قبل دخول المستشفى ودخل الأسرة .
- ❖ فيما يتعلق بالعلاقة بين الخصائص الاجتماعية والديموجرافية وتاريخ السلوك العدواني داخل المستشفى، أظهرت النتائج أن هناك فقط علاقة ذات دلالة إحصائية بين تاريخ السلوك العدواني داخل المستشفى وعدد أفراد الأسرة وأيضا علاقة ذات دلالة إحصائية بين التاريخ السلوك العدواني داخل المستشفى و التاريخ الأسري لسلوك العنف.
- ❖ فيما يتعلق بالعلاقة بين الخصائص الإكلينيكية وتاريخ السلوك العدواني داخل المستشفى، أظهرت النتائج عدم و جود علاقة ذات دلالة إحصائية بين تاريخ السلوك العدواني داخل المستشفى وعناصر الخصائص الإكلينيكية.
- ❖ فيما يتعلق بالعلاقة بين الخصائص الإكلينيكية ونوع السلوك العدواني داخل المستشفى ، أظهرت النتائج عدم وجود علاقة ذات دلالة إحصائية بين نوع السلوك العدواني داخل المستشفى وعناصر الخصائص الإكلينيكية.

التوصيات:

وإستنادا على النتائج السابقة من هذه الدراسة، تم إقتراح التوصيات التالية :-

- يجب أن ينشأ نظام يختص بالتقييم الدقيق للعدوان والعنف الصادر عن المرضى في مستشفيات الأمراض النفسية.

- الحفاظ على أجواء بناءة وعلاجية داخل المستشفى تقلل من إحتمالات سلوكيات العنف والعدوان من خلال تقليل الضوضاء و الإزدحام والحفاظ علي خصوصية وسلامة المرضي.

- ضرورة تعليم المرضى مهارات حل المشكلات، إدارة الغضب وكيفية التكيف مع الضغوط والإحباطات لتمكينهم مواجهة الغضب والعدوان بطريقة بناءة.

- ضرورة تنفيذ برامج تدريب وورش عمل لأعضاء الفريق الصحي على التنبؤ والوقاية من السلوك العدواني والعنف.

- ضرورة إجراء مزيد من الأبحاث المستقبلية عن العوامل المسببة للسلوك العدواني والعنف لمرضى الفصام مع إجراء دراسات عن الطرق الممكنة للوقاية من ومعالجة ظاهرة العدوان.

العوامل المنذرة للسلوك العدواني والعنف بين مرضى الفصام

رسالة مقدمة

توطئه للحصول على درجة الماجستير
في
(تمريض الصحة النفسية والعقلية)

من

فتحية عبدالله أحمد شمس الدين

معيدة بقسم تمريض الصحة النفسية و العقلية

كلية التمريض
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2016