

**PSYCHOSOCIAL CORRELATES OF CONVERSION DISORDER AMONG  
ADOLESCENTS SEEN AT THE OUPATIENT YOUTH CLINIC AT KENYATTA  
NATIONAL HOSPITAL**

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## DECLARATION

I declare that this thesis is my original work and has not been presented for the award of a degree in this or any other university.

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## **DEDICATION**

I dedicate this Research project to my husband, who has been a source of great inspiration in the course of this project, my son and parents.

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I acknowledge the support and encouragement of my family; Mr. Michael Njiru and Liam for showing interest in my studies and keeping me in their prayers.

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## **LIST OF ABBREVIATIONS**

CD	Conversion Disorder
CDS	Conversion Disorders
DSM-5	Diagnostic and Statistical manual of Mental Disorders, 5 <sup>th</sup> Edition
DSM-IV	Diagnostic and Statistical manual of Mental Disorders, 4 <sup>th</sup> Edition
KNH	Kenyatta National Hospital
SERC	Scientific, Ethics Review Committee
UoN	University of Nairobi

## **OPERATIONAL DEFINITIONS**

Conversion Disorder	A mental condition in which a person has blindness, paralysis or other neurologic symptoms that cannot be explained by medical evaluation
Somatoform Disorders	A group of psychological disorders in which a patient experiences physical symptoms that are inconsistent with any general medical or neurologic condition
Psychosocial factors	Influences that affect a person psychologically or socially
Adolescent	A young person who is developing into an adult

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## ABSTRACT

**Introduction:** There is paucity of epidemiological data on Conversion Disorder (CD) among adolescents. However, this disorder is common among adolescents attending any medical health care clinics. It is mostly associated with psychosocial stressors and there are limited studies focusing on the psychosocial environment of adolescents presenting with CD.

**Aim:** The aim of this study was to analyze psychosocial factors associated with CD among adolescents attending youth clinic in KNH.

**Methodology:** This was a retrospective study where data for the period March 2014 to March 2019 was collected using a researcher designed social demographic form and data abstraction form at KNH outpatient youth clinic. Data was analyzed using SPSS for windows version 23. We used frequency proportions, Chi square and Pearson correlation analysis.

**Findings:** The study established that the prevalence rate of Conversion Disorder ranged from 1.39% - 6.94% in the study period 2014 to 2019. CD was predominant among females (64.6%), and in the age group 16-19 years (52.4%). Psychosocial factors of concern were parental death (25.9%), communication problems in the family (23.8%), failure in exams/fear of failure (48.3%) and physical abuse (19%). Commonest presentation was pseudo-seizures (31.9%).

**Conclusion:** Psychosocial factors were prevalent and correlated among adolescents presenting with Conversion Disorder particularly family, school and parental problems.

**Recommendations:** Screening and interventions for conversion disorder should be done for adolescents with psychosocial concerns but presenting with physical symptoms.

Identification and management of conversion disorders should be well taught to other mental health workers to improve management. Psycho education for these disorders should be done for the patients which helps in their management and understanding of stress management

# CHAPTER ONE: INTRODUCTION

## 1.1 Introduction

World Health Organization (WHO) estimates that 10-20% of children and adolescents live with mental health problems; with depression, anxiety, PTSD and somatoform disorders being among the commonest disorders (WHO, 2018). Conversion Disorder (CD), a somatoform disorder is highly common among youth seeking health services in outpatient departments of general medical facilities and therefore these disorders are among important common mental health problems globally (Maharaj et al., 2013). It is estimated that 20-25% of patients in general hospital setting have symptoms of Conversion Disorder (Feinstein, 2011). Unfortunately there is paucity of specific data for prevalence in adolescents in developing countries (Sharma, Giri, Dutta, & Mazumder, 2005)

In the Diagnostic and Statistical Manual of mental disorders fifth edition(DSM-5; 2013), Conversion Disorders (CDs) are also called functional neurological symptom disorders (Ali et al., 2015). Conversion Disorder (CD) is defined as a psychiatric condition in which a person experiences physical signs and symptoms which cannot be attributed to any medical or neurological condition and which is most times associated with a particular psychosocial stressor (Sharma et al., 2005). Some examples of conversion symptoms include paralysis, dystonia, blindness, anesthesia, psychogenic non-epileptic seizures, motor tics, difficulty swallowing, walking difficulties, hallucinations and dementia (Ali et al., 2015). CD is however more common among adolescents than the younger children and is rarely seen in children less than five years (Ghosh, Majumder, Pant, Dutta, & Bhatia, 2007).



Psychosocial correlates have been identified in etiology of CDs. Unfortunately there are limited studies focusing on the psychosocial environment of adolescents in African settings (Sharma et al., 2005). In India, CDs are more common in female adolescents particularly those from low socioeconomic backgrounds, rural areas and in male adolescents who have scholastic problems (Ghosh et al., 2007). In the same setting, 90% of the participants presenting with one or more psychological stressor; intra-familial stressors were the most common (Sethi, Gandhi, & Dharmendra, 2010). This was in contrast to an earlier study by Sharma et al., (2005) in the same setting where stress related psychological problems were the most common correlates accounting for 40% of the children presenting with CDs.

Some of psychosocial factors as indicated in the study by Sethi et al., (2010) include parental conflicts, punishment at home or school, death of close family member, poor performance in school and negative influence by peers. Earlier documented psychosocial factors by Sharma et al., (2005) include lack of proper supervision of studies at home and at school, stress at family level, being an only child, poor parenting styles and loss of a loved one. Similar findings were reviewed by Ali et al., (2015) where lack of education, rural population, low social economic status, younger age and female gender were identified as the psychosocial correlates for CDs. In Kenya and in other Sub Saharan Africa countries, there remains paucity of data for psychosocial correlates of CD, making it difficult to identify causative factors associated with CDs.

Conversion Disorders (CDs) lead to significant impairment in daily living activities and family relationships (Baniya, Verma, Solanki, & Goyal, 2017). Nwokocha et al., (2017) posits that there are few studies focusing on adolescents with CDs in Sub-Saharan Africa. Nwokocha et al., (2017) looked at somatoform disorders in adolescents though did not extract data focusing on

CDs. Adolescents with CDs have a myriad of psychosocial stressors that go undocumented in clinical notes in most General Medical Facilities. This makes it difficult to hypothesis factors that can be used in diagnosis and progression monitoring of CDs. This study is therefore designed to highlight the psychosocial factors associated with CDs. This has a main aim of enlightening Health Care Workers (HCWs) and other stakeholders to look out for CDs among adolescents attending their general medical facilities and present with somatization symptoms.

## **1.2 Problem Statement**

There are few studies done on psychosocial correlates associated with conversion disorders among adolescents in the African settings (Nwokocha et al., 2017). Considering different environments shape adolescents' stressors and coping abilities differently, psychosocial correlates identified in one setting as leading to CD may not out rightly be replicated in another setting. This lack of reliability shows that different outcome, diagnoses and management outcomes may need to be constructed. Unfortunately, it is difficult to design these approaches if one is not sure of the psychosocial outcomes associated with CDs.

Moreover, many adolescents present with somatization symptoms but no specific psychosocial correlates are stated, hence it is difficult to plan appropriate interventions in the management of CDs. Since many parents tend to attribute symptoms to organic causes rather than psychological causes, this causes huge burden on the adolescents, families and wastage of resources in a bid to find out what could be the problem. Many medical investigations and treatments are done which in turn reinforces belief in patient that there is an underlying physical cause. As a result children often miss school to attend multiple appointments and parents in turn have to request for time off work to take care of their children and attend clinic appointments (Fiertag, Taylor, Tareen, & Garralda, 2012).

This study will be designed to bridge this gap by assessing the main psycho-social correlates among adolescents who had a diagnosis of CD in last three years at the KNH youth outpatient clinic.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

Conversion disorder (CD) is a psychiatric illness presenting with neurological symptoms without any organic cause, which could be in response to emotional stress (Kanaan & Ejareh dar, 2016). The symptoms include convulsion (non-epileptic seizures), aphonia, amnesia and other sensory deficits (Baniya et al., 2017). According to Baniya et al., (2017), CD is often found among adolescents and younger age groups and results from stressful life events and psychological trauma. Psychosocial factors that have been associated with conversion disorders among adolescents include familial stress, sibling rivalry, poor parenting skills, sexual/physical abuse, punishment at home or school, death of close family member, poor performance in school, peer pressure, being an only child, sickness in the family, lack of proper education, living in rural areas and female sex. (Ali et al., 2015; Sethi et al., 2010; Sharma et al., 2005).

### **2.2 Psychosocial Factors of Conversion Disorder in Adolescents**

#### **2.2.1 Familial Stress**

Sharma et al., (2005) defines familial stress as disturbed family environment and it was a contributory factor to conversion disorder among adolescents and children as documented in 40% (n=16) of the cases in their study. They further identified discord/conflict between father and mother as a stressor within the family level though they did not indicate to what extent. In another study conducted among children, it was made clear that familial stress is of importance in CD since 13 ( 43% ) of children had stress related to family (Krishnakumar, Sumesh, & Mathews, 2006). In a sample of 22 girls and 8 boys, Krishnakumar et al., (2006) identified sibling rivalry (27%), parental death, separation or divorce (10%), parental disharmony (6%) and mental illness in family (10%) as some of the factors specific to the family environment.

It is however important to note that none of these studies extracts data specific to adolescents presenting with CD. In two other studies done in India on familial factors were significantly common in CD. Most common stressors in study by Sethi et al., (2010) were intra familial factors like parental discord, death in family and unwarranted punishments. In another study, family issues such as conflict in the family, poor communication and anxious family were the most common source of stress in 38 (63.3%) children (Richa, Ghildiyal, Subramanyam, & Sharma, 2017). Richa et al., (2017) did not focus on CDs among adolescents but rather gave us findings on Somatic Symptom and related disorders in children in terms of their family environment.

Sibling rivalry has been shown in several studies to be an important factor specific to family environment of those presenting with CD (Ghosh et al., 2007; Krishnakumar et al., 2006; Sharma et al., 2005). Being an only child in a family was seen to be significant in 33.3% (n=13) of cases as shown in study by Sharma et al., (2005). This is in contrast to another study where majority of patients with CD had 4-6 siblings bringing in concept of family size (Nasar Sayeed Khan, Ahmad, & Arshad, 2006). None of these studies focuses on the adolescent population. It is therefore important to study familial stress as contributory factor to CD among adolescents in our setting and try to identify these specific factors since different studies seem to pick out different factors.

### **2.2.2 School Factors**

A lot of functional impairments occur among school going children with CD as seen in a study done in Canada which showed that 65% of children had missed school (Grant et al., 2015). Other school going adolescents as seen in a study done in Germany avoid going to school hence the need to look out for factors within school environment that could be leading to this.

These factors include school and class size, relationship with teachers and communication between parents and teachers (Knollmann Martin, Knoll Susanne, Reissner Volker, Metzellers Jana, 2010). Adolescents who are later diagnosed with CD face several issues in their schooling like difficulty in learning, poor performance, expulsion from school, failure to cope with curriculum, and frequent change in school by the parents (Richa et al., 2017). Krishnakumar et al., (2006) identified school related stress in 11 (37%) children which included scholastic problems (27%), examination failure (20%), punishment by teacher (17%), conflict with classmates (13%) and change of school (6%).

Other studies have alluded to the fact that stress at school level and academic difficulties are contributory factors to CD among school going adolescents and children (Huang, Su, Lee, Bai, & Hsu, 2009; Sethi et al., 2010; Sharma et al., 2005) . Another study showed that unhappiness in school is a contributory factor for CD though this study does not find out the reason for students being unhappy with school (Leary, 2003).

Nwokocha et al., (2017) carried out a study among secondary school students which pointed out to absenteeism from school though his study focused on Somatoform disorders and he did not clearly find out the factors leading to CDs among those attending school.

### **2.2.3 Sexual/Physical Abuse**

A study in Ireland showed that childhood trauma had adverse effects on the brain development and hence could affect emotional behavior and style of coping among such children (Power et al., 2018). CD is linked with experiences of being abused such as neglect by parents, sexual/physical abuse by close relative and being bullied in school (Huang et al., 2009). Several

other studies have shown that sexual abuse is a common factor among adolescents with CD (Ali et al., 2015; Leary, 2003; Sharma et al., 2005).

It is thus clear that there is a relationship between childhood sexual abuse and development of CD, yet many cases of sexual abuse among children and adolescents with CD are often unrecognized (Sobot, Ivanovic-Kovacevic, Markovic, Misic-Pavkov, & Novovic, 2012). This relationship is yet to be established in studies done in our setting hence need for current study.

#### **2.2.4 Parental Factors**

In study by Richa et al., (2017), it is evident that factors relating to parents can lead to CD and includes factors such as separation or divorce of parents, parents who are too busy in their jobs, overprotective parents, loss of job by parent, alcoholism and other substance use among parents. Poor parenting styles has been documented in several studies as a factor in development of CD (Ada, Mahour, Agrawal, Arya, & Kar, 2018; Richa et al., 2017; Sharma et al., 2005). According to Sharma et al., (2005), improper parenting is noted in 20% (n=8) of cases though he does not explore on the specific parenting skills that are lacking. This is not the case in study in India by Ada et al., (2018) where he attempts to explore the various parenting styles and their contribution towards CD. Most mothers were permissive while fathers were authoritative in their parenting which differs with results from study by Richa et al., (2017) where most children (50%) had authoritarian parents.

It is important to understand that most mental health issues arising in adolescents are related to parenting skills (Joseph & John, 2008) hence the need for present study to identify the various parenting styles that might lead to development of conversion disorders. More over

parenting styles have not been highlighted in our setting as contributing to CD hence the need to pursue present study.

### **2.2.5 Punishment at Home or School**

The manner of disciplining for children seems to play an important role in CD among adolescents whereby non-corporal disciplining is advocated for (Richa et al., 2017). It is worth identifying modes of punishment at home and school that could impact on CD among adolescents.

### **2.2.6 Social Demographic Factors**

Age of onset of CD among adolescents remains not well understood though some studies have attempted to explore on this. An Australian study on children and adolescents put the mean age at 13 years with a range of 8-17 years in a sample of 42 girls and 18 boys (Chudleigh et al., 2017). There was an almost similar finding in a Canadian study where average age of onset was 14 years with a range of 8-18 years with predominant gender being females (72%) and males (28%) in a sample of 130 children and youths (Grant et al., 2015). An Indian study which included people of all ages reported that the average age of onset was 13 years with a range of 10-16 years (Pandit, Kumar, Yadav, Kaur, & Kumar, 2011). Another Indian study focusing on children and adolescents with CD pointed out that the majority of cases were in the age ranges of 12-16 years (Sethi et al., 2010).

Most studies have shown that in terms of gender CD is more common among females than males (Ali et al., 2015; Grant et al., 2015; Pandit et al., 2011; Sethi et al., 2010). Most cases of CD have also been witnessed among those living in rural areas and of low socio-economic status (Ali et al., 2015; Deka, Chaudhury, Bora, & Kalita, 2007; Sethi et al., 2010; Sharma et al.,



2005). Study by Sethi et al., (2010) showed that majority of cases were school goers (85%) in a sample of 332 children which seems to agree with findings from other studies (Deka et al., 2007; Sharma et al., 2005).

### **2.3 Prevalence of Conversion Disorder among Adolescents**

Unlike other psychiatric disorders that impact children and adolescents like Attention deficit hyperactivity disorders, CD has been considerably under studied. Consequently, there is lack of adequate data particularly empirical data on the same. Nevertheless, the few studies published on CD show low to moderate prevalence rates. In a systematic review that was done if a number of studies published in last 10years on conversion disorders, the prevalence rates were recorded as ranging from 0.2 to 31% (De Cos, M., Garcia, M., Gómez, V. M., Chinchurreta, d. L., Rodríguez, N. C., & Sánchez Sánchez, 2016). The lower rates were noted in data produced from outpatient clinics in Germany and the 31% were notably from other non- westernized countries. The researchers found that despite children having emotional distress presenting as physical symptoms, the paucity in studies on the same was outstanding. They recommended that more studies needed to look into CD.

In a study that sought to compare the differences in the prevalence of hysterical tendencies- which is a symptom of conversion disorder-in adolescents and in turn assess its impact factors across three provinces in China; the researchers reported low prevalence rates of slightly above 14% (Qinglin, C., Li, X., Yunkai, H., Jinfeng, H., Wei, G., Yongxiang, L., & Yong, 2018). The study was a cross-sectional, multicentre and school based across the three provinces. The main aim was to look the effect that gender had on the presentation of hysteria among adolescents and the study found that hysteria was more prevalent in female adolescents. However, it was notable that the difference in prevalence rates was only 2%. This was attributed

to superstitious beliefs pertaining to life, somatotype, teacher-student satisfaction, and family achievement orientation were significantly.

In a review of studies that have been done to assess prevalence of pain symptoms and recurrent headaches, it was reported that these conversion disorders presentations tend to be prevalent among children and adolescents. For instance, in a study that had been done in Northern Sweden to determine the prevalence of tiredness, stomach aches, headaches and backaches in young school children, it was reported that 31% of the children that were included in the study at least reported feeling tired once a week (Petersen, S., Bergström, E., & Brulin, 2003). More significantly, 16% of them reported feeling tired every day. The most reported pain was recurrent headache which was reported by 23% of the participants. 19% reported recurrent stomach aches while 18% reported backaches (Petersen et al ., 2003). The researcher also found that as the children became older, these symptoms would be more intense. This finding was also reported in a study that was done in Germany that looked into recurrent back pain, abdominal pain, and headache in children and adolescents within a four year-period (van Gessel, H., Gassmann, J., & Kröner-Herwig, 2011). In a Canadian study that looked into the frequency, trajectories and predictors of adolescent recurrent pain, it was reported that 26.1%-31.8% of adolescents between 12 and 18yrs reported to be having recurrent headaches and 13.5% - 22.2% complained of recurrent stomachaches while 17.6% -25.8% reported to be having recurrent back pain. Girls seemingly had more complaints than boys (Stanford, E., Chambers, C., Biesanz, J., & Chen, 2008).

In Africa, a few studies have been done on CD. One such study was done in Nigeria where researchers looked at the prevalence of headaches and other symptoms among adolescents. This study reported prevalence rates of 50% to 54% for headaches and other

symptoms among these adolescent participants (Nwokocha et al., 2017). Another study that was also done in Nigeria, generally assessed the knowledge mental health workers had to enable them to diagnose CD correctly (Ndukuba et al., 2015). There is serious paucity of data on CD from Africa and globally, a gap that this study seeks to fill in literature.

#### **2.4 Presentation of Conversion Disorder among Adolescents.**

An Australian study exploring on Psychogenic Non- Epileptic Seizures(PNES) among 60 children and adolescents revealed that the PNES presented alongside other functional neurological symptoms in 28(47%) of cases, in 10(17%) of cases PNES were occurring alongside chronic pain presentation and in 22(36.7%) of cases PNES was primary presenting problem (Chudleigh et al., 2017). These findings are consistent with report in an Indian study which found out that one of the common presentations of CD is non-epileptic events also called pseudo seizures, psychogenic, non-epileptic or hysterical seizures though this study was not specific to adolescent population but included people of all ages (Pandit et al., 2011). Grant et al., (2015) in describing features of CD among Canadian children and adolescents found out that 87% of cases had multiple conversion symptoms. Most common presentations were disturbance of voluntary motor function (56%), abnormal movements (45%), pseudo seizures (42%), sensory symptoms (38%), visual deficits (27%), speech disturbance (11) and hearing deficits (7%).

Multiple conversion symptoms seem to be a consistent feature in presentation of CD since another Canadian retrospective case study conducted among 15 adolescents showed that the presentations were complex with 60% presenting with multiple conversion symptoms. Most common presentations were pseudo seizures(67%), disturbance of voluntary motor function(31%), sensory symptoms(23%) and gastrointestinal problems(23%) (Kranisk C, Findlay S, 2010). Studies done in India have shown that pseudo seizures are the most common

presentation of CD among children and adolescents (Ghosh et al., 2007; Richa et al., 2017; Sethi et al., 2010).

These studies did not however focus on the adolescent population. A study conducted in Japan showed that presentation of CD in childhood and adolescence is mainly poly symptomatic rather than mono symptomatic. Records of 44 children and adolescents with pseudo neurological symptoms were reviewed and showed 25 poly symptomatic cases versus 19 mono symptomatic cases (Murase, Sugiyama, Ishii, Wakako, & Ohta, 2000). Nwokocha et al., (2017) in a Nigerian study focused on presentation of Somatization Disorder among adolescents and did not extract data on presentation of CD among adolescents in an African setting. There are no local studies focusing on presentation of CD among adolescents.

In terms of severity of CD it is important to understand that prognosis of CD is linked to duration of symptoms and the good prognostic signs include acute onset, short duration of symptoms, a clearly identifiable stressor and access to a therapist (Feinstein, (2011). The findings in this study are consistent with findings in a review by Ali et al., (2015) where good prognosis was to be expected in patients whose CD had a sudden onset, short duration, early identifiable stressors and in addition good premorbid functioning and lack of comorbid psychiatric disorders. Study by Feinstein, (2011) did not focus on the adolescents but sought to bring to our understanding that for most patients with CD, the acute symptoms resolve within weeks but 20-25% of patients may have recurring symptoms within a year often in association with a particular stressful event. Among the adolescent population, Canadian study by Grant et al., (2015) showed the average duration of symptoms to be 1-6 months with most cases (72%) confirmed by the sixth month. Majority of the adolescents (63%) required hospital admission to determine the diagnosis with average duration of stay being 13 days. Having multiple different

stressors has also been implicated with the symptom severity of CD (Kanaan & Ejareh dar, 2016).

Adolescents presenting with CD experience functional impairments as a result of factors surrounding symptom onset and this leads to missed school days as shown in a Canadian study where the affected adolescents had missed school for an average of 36 days (Grant et al., 2015). This indicates that stress at school level subsequently affects the child's performance in school which was a finding in study by Sharma et al., (2005). Being diagnosed with somatic problems has also been linked with the adolescent withdrawing from his peers and often been seen as abnormal or psychotic (Nwokocha et al., 2017). No local studies have shown the effect of these psychosocial factors among adolescents with CD.

## **2.5 Study Justification**

Majority of adolescents are often misunderstood at school and at home for failure to identify that the symptoms of CDs they are exhibiting are as a result of their emotional and psychosocial stressors. This leads to negative outcomes such as missed school days, unwarranted corporal punishments and conflicts with parents. The study is construed to identify the psychosocial factors that are attributed to conversion disorders hence mitigate the unwarranted outcomes and help in better diagnoses and management of CDs.

## **2.6 Significance of the study**

The current study findings can be useful to the KNH Youth Centre in better identification of cases of CDs among adolescents and manage the associated psychosocial factors appropriately. This study is relevant to schools and parents in terms of sensitizing the concerned authorities on CD and its presentation hence ensure they handle such cases appropriately.

## **2.7 Scope**

The study focused on adolescents aged 13-19 years diagnosed with CD and the associated psychosocial factors present at the time of diagnosis. This study relied on cases referred to KNH hence could miss out on general presentation in other hospital settings.

## **2.8 Study Question**

What psychosocial factors are associated with Conversion Disorder among adolescents attending youth clinic in KNH?

## **2.9 Study Objectives**

### **2.9.1 Broad Objective**

To analyze the presentation, severity and psychosocial factors associated with Conversion Disorder among adolescents attending youth clinic in KNH.

### **2.9.2 Specific Objectives**

1. To explore psychosocial factors and analyze the psychosocial correlates in conversion disorder at the youth clinic in KNH.
2. To document the prevalence of CD in adolescents seen at youth clinic at KNH.
3. To document the presentation of CD in adolescents seen at youth clinic at KNH.

## **2.10 Assumptions**

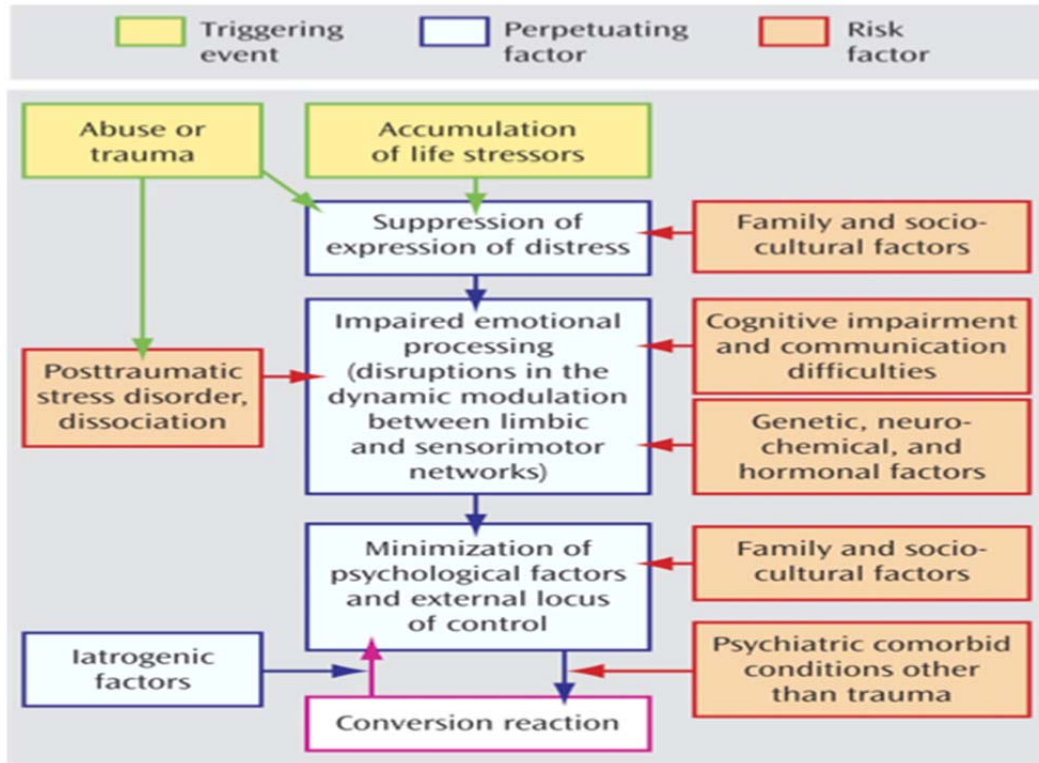
CD is a strange disease according to our cultural setting.

The symptomatology of CD at time of presentation could be severe or a times presents as malingering.

## **2.11 Theoretical Framework**

This study used the psychodynamic theory. The term CD was coined by Sigmund Freud who hypothesized that occurrence of certain symptoms not explained by organic diseases reflects unconscious conflict (Ali et al., 2015). CD often occurs as a result of psychological conflicts or stressors. Theories on why CD manifests are based on Freudian concepts of suppression and avoidance as an unconscious defense mechanism against traumatic events. Primary gain of the disorder is often in the form of translation of emotional stress into conversion symptoms. External benefits like avoiding obligations or receiving attention from loved ones is viewed as secondary gain (Physiopedia, 2018). This theory points out that children and adolescents may present with conversion symptoms for various reasons such as to avoid emotional pain by causing physical pain and to communicate their pain, anger or other emotions to others. Psychodynamic theory is thus relevant for this study in that adolescents experience several psychosocial challenges that directly affect their emotional wellbeing and thus present with symptoms of CD since they are unable to verbally explain their past or present conflicts.

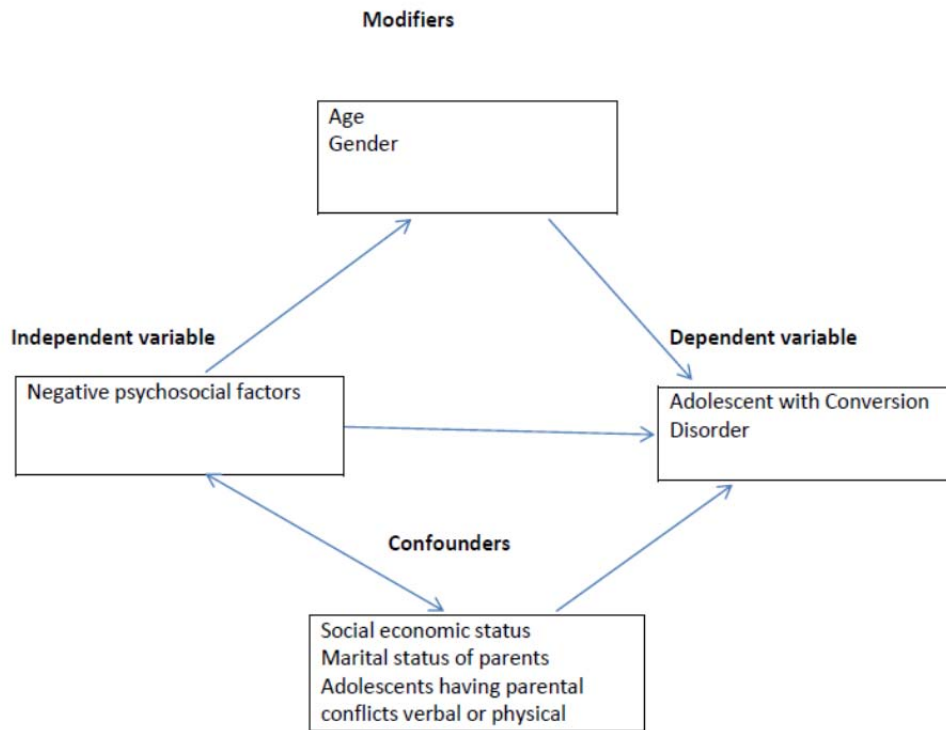
The diagram below illustrates the psychodynamic theory.



(Physiopedia, 2018)

**Figure 2.1 Psychodynamic Theory**





**Figure 2.2 Conceptual Framework**

**KEY:**

Independent Variable: this includes parental, familial, school factors and other related stressors which contribute to adolescents developing Conversion Disorder.

Dependent Variable: It is the outcome among adolescents who have been exposed to various psychosocial factors.

Confounders: These are the external factors which influence both the dependent and independent variables in this study.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Study Design**

This was a retrospective study that documented the independent variable (psychosocial correlates) causing Conversion Disorder, the outcome among adolescents attending outpatient clinic at KNH. Quantitative data was extracted from files of adolescents diagnosed with CD through use of a structured questionnaire.

### **3.2 Study Area Description**

The study was conducted at KNH which has 50 wards, 22 outpatient clinics, 24 theatres and an Accident and Emergency department. It has a total capacity of 1800 beds. The hospital serves patients from all over the country; hence study participants are a good representation of patients from the whole country. KNH is situated within Nairobi County and is a referral and teaching hospital.

The research was conducted at the KNH Youth Centre outpatient clinic. It was initially called Adolescent Crisis Centre or High-Risk Clinic and used to mainly serve those who got early pregnancies. There was limited utilization of services because of the name hence was renamed Youth Centre and since then there has been good influx of youths to the clinic. It caters for youths from 13-25 years and is open Monday to Friday 8 am to 5 pm. The youths are seen free of charge since they are seen under the youth friendly youth program. Services offered at the clinic include counseling, psychiatric evaluation by psychiatrists and reproductive health services. The clinic has 2 Consultant Psychiatrists, 1 clinical psychologist and 6 nurses. The nurses at the clinic are trained in counseling since most youths require counseling services. Postgraduate students in psychiatry and also psychology students rotate at the clinic.

Around 25 to 30 youths are seen on average per day. The clinic experiences heavy flows on Tuesdays since it is normally a psychiatric clinic and during school holidays. Some of the psychiatric conditions seen at the clinic include Conversion Disorders, Convulsive disorders, Conduct disorder, substance use disorders, Depressive disorders, Schizophrenia among other disorders.

Support groups were present at the clinic but no longer functional currently due to lack of funds. They used to be conducted on Saturdays and youths were grouped; those with substance use issues, those who need behavior change and those with reproductive health issues.

### **3.3 Study Population**

The study population comprised of all adolescents from age 13-19 years who have been attending KNH youth clinic and were diagnosed with conversion disorder

### **3.4 Sample Size Determination**

For the data abstraction, the sample size included the whole population of adolescents from age 13-19 years seen at the youth clinic from March 2014 to March 2019. The sample size calculation was as follows:

Number of adolescents with CD seen per year x Study period= Total Sample Size

$$35 \times 5 = 175$$

The number of adolescents/files targeted is 175 hence the choice of period from March 2014 to March 2019 to ensure that we are able to reach our target and to have an adequate representative sample. The selected period of 2014 to 2019 also captures the latest cases of CD. The number of adolescents seen for CD per year according to the record books at the youth center is

approximately 35 hence the choice of period 2014 to 2019 to achieve required sample size of 175 adolescents.

### **3.5 Sampling Procedure**

This was a survey where all the adolescents seen in the KNH youth clinic with diagnoses of CD during the three-year period beginning March 2014 to March 2019 were identified, the files retrieved from the hospital's registry, after which the social demographic data and other relevant data was recorded.

### **3.6 Inclusion and Exclusion Criteria**

#### **3.6.1 Inclusion Criteria**

1. Adolescents from age 13-19 years
2. Those who have been seen in youth clinic from March 2014 to March 2019
3. Those who have received diagnosis of Conversion disorder according to clinical records.

#### **3.6.2 Exclusion Criteria**

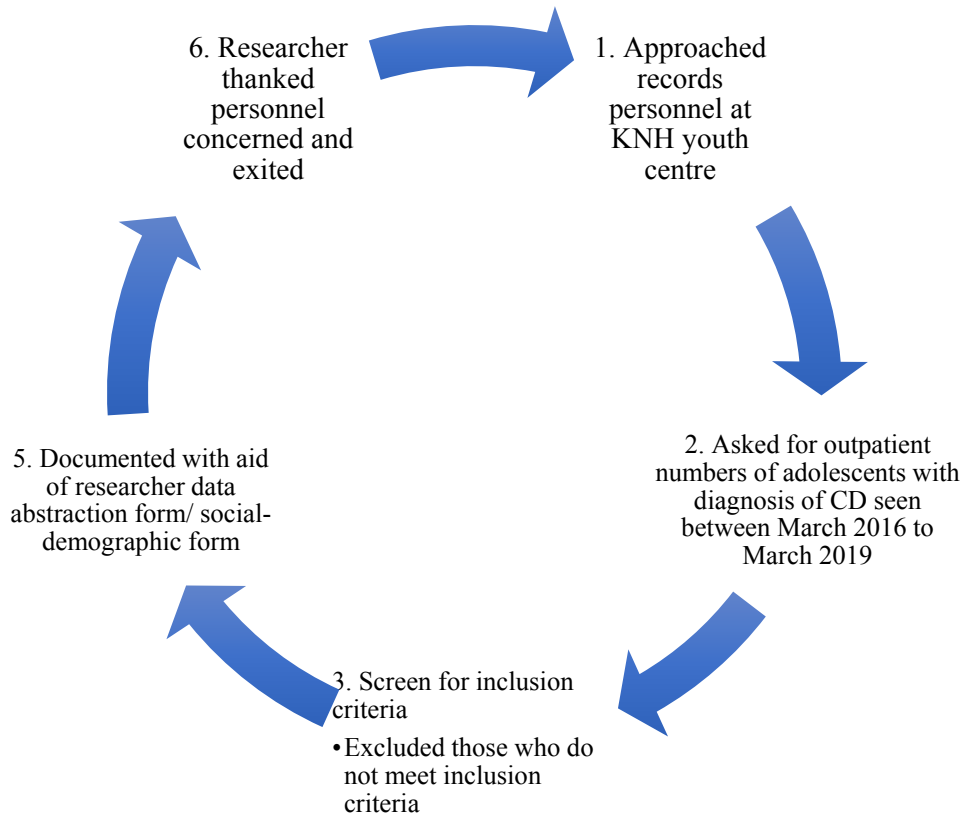
1. Those adolescents without clear documentation of how diagnosis of CD was justified.

### **3.7 Data Collection Procedures**

The researcher approached the one concerned with keeping of records at the KNH youth clinic. The researcher then asked for files of those adolescents diagnosed with CD in the period of March 2014 to March 2019. Those from age 13-19 years with diagnosis of CD will be selected. For secondary data, demographic characteristics, information on schooling, family dynamics and other relevant data was obtained from respective patient files and recorded. To achieve this the patient file numbers of those with diagnosis of CD were identified from the youth clinic records book and then used to retrieve the patient files from the records department,

and the relevant information was recorded. A researcher designed data abstraction form and demographic form was used to retrieve data from the files with aid of a checklist.

### 3.8 Data Collection Flow Chart



### 3.9 Variables

The independent variable which is psychosocial factors were extracted from files through use of a researcher designed questionnaire. The psychosocial factors include familial factors, parental factors, school factors, sexual/physical abuse and punishment. The dependent variable which is adolescents with CD was extracted from files of those diagnosed with CD.

### **3.10 Quality Assurance Procedures**

1. Approval for the proposed study was obtained from the Kenyatta Hospital and University of Nairobi's Scientific, Ethics Review Committee (SERC)
2. The study was done under supervision of two lecturers at the UoN's department of Psychiatry.
3. The researcher did the study and is trained in diagnosis and management of CD.
4. Presentation of the results was done at the UoN's department of Psychiatry, and the findings will be published in a peer reviewed journal.

### **3.11 Data Management**

Data entry and analysis was done using SPSS for windows version 23 and stored into a password protected database. The questionnaires used for data collection was locked in a cabinet with access controlled by principal investigator. Quantitative data entered in SPSS is protected with a password to which only principal investigator is privy.

### **3.12 Data Analysis and Presentation**

SPSS was used to calculate frequencies and data was presented inform of tables and figures. The psychosocial correlates were analyzed using point biserial Pearson's correlational analysis. Multivariate analysis was done to determine predictive social correlates in CDs. The variables will include parental marital status, occupation of parents, number of siblings, school status, parental issues, school issues, abuse and punishment.

### **3.13 Data Management**

1. The researcher ensured the safety and storage of all original records e.g. questionnaires and research authorization documents for anonymity and completion.
2. The final database, on which data analysis and publication was based, was properly labelled ready for archiving.
3. The researcher was responsible for the final reporting procedures including reporting to the KNH-UoN ERC at the end of the research project including publications and results dissemination plan.

### **3.14 Ethical Consideration**

1. No personal identifiers were used during data collection to protect the confidentiality and privacy of the data retrieved from files. Data security was ensured by the researcher by storage of the data in a password protected computer after entry. The researcher ensured that data collected was confidential and was solely used for the purpose of the study.
2. There were no anticipated risks of participation in the study.
3. The study findings are beneficial for KNH youth clinic for better management of CDs among adolescents through identifying the appropriate psychosocial stressors.
4. The proposal went through KNH- UoN ERC.
5. The researcher obtained permission from KNH records section
6. Codes instead of names were used to ensure confidentiality and this was included in the data capture forms.

### **3.15 Study Result Dissemination Plan**

The researcher was responsible for documentation and submission of both hard and soft copies to the Department of psychiatry for marking and grading and organized for long term storage at the University of Nairobi's library repository. The role of supervisors was to correct the researcher during data collection and to check for data quality, clarity and completeness. They were responsible for guiding the researcher on publication of the study in a reputable peer reviewed journal.

### **3.16 Study Limitations**

Lack of proper documentation and missing files led to gaps in the current study. Countering this limitation is more organizational from Kenyatta Hospital Youth Centre management. Better record keeping strategies should be employed.



## **CHAPTER FOUR: RESULTS**

### **4.0 Introduction**

This chapter entails the analysis of retrospective data obtained from the KNH youth center data base on adolescents diagnosed with conversion disorder or somatoform disorder over a period of 5 years (2014 March to 2019 March).

The results are presented according to the study objectives which were:

1. To explore psychosocial factors and analyze the psychosocial correlates in conversion disorder at the youth clinic in KNH.
2. To document the prevalence of CD in adolescents seen at youth clinic at KNH.
3. To document the presentation of CD in adolescents seen at youth clinic at KNH.

### **4.1 Accumulated Cases for Data Extraction**

The target population was purposively selected from the youth center data base. Files of the respondents with diagnosed Conversion Disorder as per the DSM V criteria were selected for the study. Total number of respondents indicated to be having conversion disorder diagnosis was 163. However, 16 files from different year categories were not found for perusal or data extraction. Therefore, the files that were analyzed were 147.

### **4.2 Respondents' Socio Demographic Profiles**

Table 4.1 presents socio-demographic characteristics of the respondents who were adolescents between the ages of 13 to 19 with a diagnosis of conversion disorder/ somatoform disorder. Overall, most of the adolescents that were found to be having conversion disorder were in their late adolescence between the age of 16 and 19yrs (52.4%; (77)). Forty-seven-point six percent (47.6%; (70)) adolescents were in their mid-adolescence between the ages of 13 to 15

yrs. The mean age of respondents was 15.71 (SD. 1.870). The median was 16 and the mode was 15yrs. Thirty-five-point four percent (35.4%; (52)) of the respondents were male while 64.6% (95) were female.

Twenty-nine-point three percent (29.3% (43)) of the respondents had completed or were still in primary school, 58.5% (86) had completed or were mostly in secondary school education, and only 9 (6.1%) respondents were attending college. Majority of the respondents were Christians (83.7%, (123)), 13.6% (20) of the files had no information on patient's religion. Only 2.7% (4) were non-Christian.

Table 4.1 also shows some socio-demographic characteristics of the adolescents' primary caregiver (parent); Sixty-three-point nine percent (63.9% (94)) were married while 20.4% (30) were separated. Twelve-point nine percent 12.9 % (20) were widowed while only 2.0% (3) were single. Only thirty-two-point two percent (32.2%, (47)) of the respondents indicated that they were formally employed.

**Table 4. 1*****Respondents Socio-Demographic Profiles***

Variable		Outcome 147/100%	
		Frequency (n)	Percentage (%)
Gender	Male	52	35.4%
	Female	95	64.6%
Age (years)	13-15 (Mid-Adolescence)	70	47.6%
	16-19 (Late Adolescence)	77	52.4%
Level of education	Primary	43	29.3%
	Secondary	86	58.5%
	College/ University	9	6.1%
	NR	9	6.1%
Religion	Christian	123	83.7%
	Non- Christian	4	2.7%
	Not specified	20	13.6%
Marital Status of the parents	Single/ Never Married	3	2.0%
	Married	94	63.9%
	Widowed	20	12.9%
	Divorced/Separated	30	20.4%
Occupation Status of the parents	Employed	47	32.2%
	Self employed	19	12.9%
	Unemployed	28	19.0%
	Don't know	24	16.3%
	Others	29	19.7%
	No	119	17.4%

### 4.3 Prevalence of Conversion Disorder

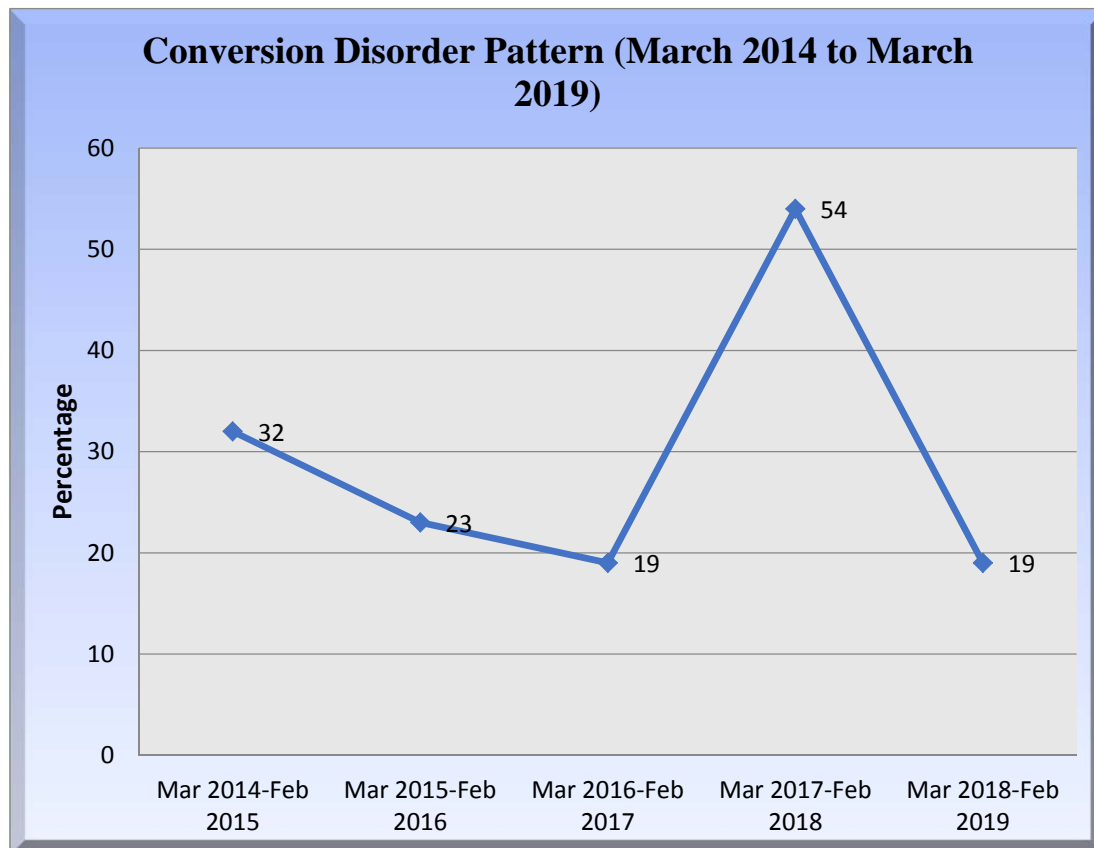
The prevalence rates were calculated based on the number of adolescents between the age of 13 to 19yrs that attended the youth center within the period stated (March 2014 to March 2019). As indicated in Table 4.2, in the year March 2017 to February 2018, the number of conversion cases managed at the youth center was higher compared to other years assessed in this study; 54/778 (6.94%) adolescents were treated for conversion in this particular year. Hence, recording the highest prevalence. March 2014 to 2015 was the second year that had a higher number of conversion cases managed at the youth center; 32/931 (3.44%) adolescents were treated for conversion in that year. Figure 4.1 illustrates the prevalence pattern over the 5-years period.

**Table 4.2**

*Conversion Disorder Prevalence Rate per Year (March 2014 to March 2019).*

Year	Prevalence	
	Frequency	Percentage
Year March 2014 to Feb 2015 (n=931)	32	3.44%
Year March 2015 to Feb 2016 (n=867)	23	2.65%
Year March 2016 to Feb 2017 (n=887)	19	2.14%
Year March 2017 to Feb 2018 (n=778)	54	6.94%
Year March 2018 to Feb 2019 (n=1361)	19	1.39%

### 4.3.1 Prevalance Pattern of Conversion Disorder over a 5 year period



*Figure 4.1: Overall Trend in Conversion disorder Prevalence*

### 4.4 Presentation of Conversion Signs and Symptoms Among Adolescents (13 to 19yrs) at the Kenyatta National Hospital Youth Clinic

Table 4.3 shows a summary of the most reported symptoms either by patients or their caregivers per year reviewed

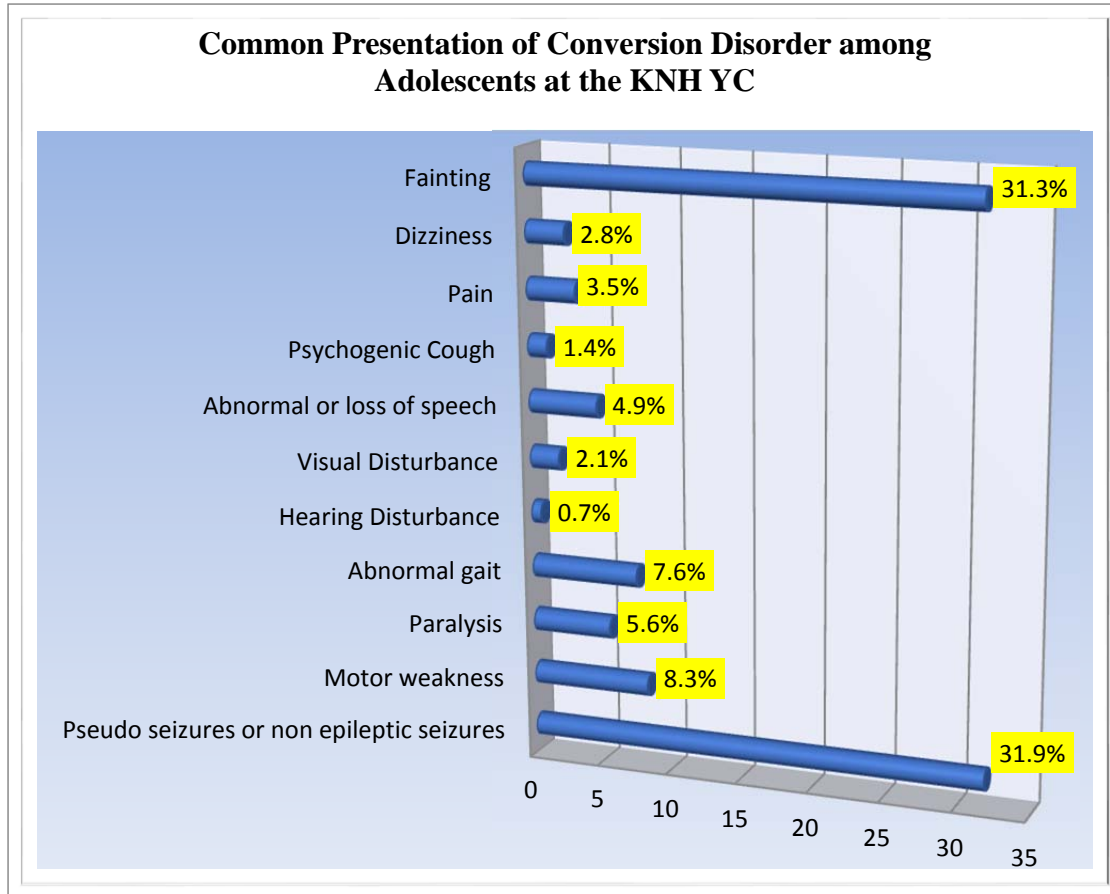
**Table 4. 3*****Common Reported Conversion Signs & Symptoms.***

Year	Symptoms	Frequency	Percent
March 2014- Feb 2015	Pseudo seizures or non-epileptic seizures	14	43.8
	Motor weakness	2	6.3
	Paralysis	5	15.6
	Abnormal or loss of speech	5	15.6
	Pain	1	3.1
	Fainting	5	15.6
March 2015- Feb 2016	Pseudo seizures or non-epileptic seizures	5	21.7
	Motor weakness	1	4.3
	Paralysis	1	4.3
	Abnormal gait	1	4.3
	Hearing Disturbance	1	4.3
	Visual Disturbance	1	4.3
	Pain	2	8.7
Fainting	11	47.8	
March 2016 - Feb 2017	Pseudo seizures or non-epileptic seizures	3	15.8
	Paralysis	1	5.3
	Visual Disturbance	2	10.5
	Psychogenic Cough	2	10.5
	Pain	2	10.5
	Fainting	9	47.4
March 2017 -	Pseudo seizures or non-epileptic seizures	15	27.8

Feb 2018	Motor weakness	6	11.1
	Paralysis	1	1.9
	Abnormal gait	7	13.0
	Dizziness	4	7.4
	Fainting	19	35.2
March 2018- March 2019	Pseudo seizures or non-epileptic seizures	9	47.4
	Motor weakness	3	15.8
	Abnormal gait	3	15.8
	Abnormal or loss of speech	2	10.5
	Fainting	1	5.3

#### **4.4.1 Overall Common Presentations of Conversion Disorder (2014 to 2019)**

As illustrated in Fig 4.2, the common presenting complaints that were noted among respondents with conversion disorders over the 5 year period were pseudo seizures or non-epileptic seizures (31.9%), followed by fainting symptom (31.3%) presented as frequent cases of muscle weakness which was reported by 8.3% of the respondents.



**Figure 4.2: Common Conversion Symptoms**

#### 4.4.2 Association between Signs and symptoms, Gender and Age

Gender was significantly associated with signs and symptoms at  $P = 0.028$ . The females presented with most reported signs and symptoms i.e. Pseudo seizures or non-epileptic seizures and muscle weakness. The effect of the impact of gender on the variable was strong at Cramer's  $V = 0.374$ .

Age was also found to be highly significant at  $P=0.005$ . Respondents in Later adolescence seem to be presenting with more signs and symptoms. The effect of the impact of age on the variable was very strong at Cramer's  $V = 0.418$ .



**Table 4. 4****Association between Signs and symptoms, Gender and Age**

Signs and Symptoms	Gender		Age	
	Male	Female	Mid adolescence	Later adolescence
Pseudo seizures /non epileptic seizures	16(11.1%)	30(20.8%)	29(20.1%)	17(11.8%)
Motor weakness	2(1.4%)	10(6.9%)	5(3.5%)	7(4.9%)
Paralysis	6(4.2%)	2(1.4%)	2(1.4%)	6 (4.2%)
Fainting	17(11.8%)	28(19.4%)	16(11.1%)	29(20.1%)
Abnormal gait	4(2.8%)	7(4.9%)	3(2.1%)	8(5.6%)
Hearing Disturbance	1(0.7%)	0(0.0%)	0(0.0%)	1(0.7%)
Visual Disturbance	3(2.1%)	0(0.0%)	3(2.1%)	0(0.0%)
Abnormal or loss of speech	1(0.7%)	6(4.2%)	6(4.2%)	1(0.7%)
Psychogenic Cough	0(0.0%)	2(1.4%)	0(0.0%)	2(1.4%)
Pain	0(0.0%)	5(3.5%)	2(1.4%)	3(2.1%)
Dizziness	1(0.7%)	3(3.5%)	4(2.8%)	0(0.0%)
		$X_2=20.136$		$X_2=25.172$
		$df=10$		$df=10$
		$P\ values=0.028$		$P\ values=0.005$
		$Cramer\ V=0.374$		$Cramer\ V=0.418$

**4.5 Psychosocial Factors****4.5.1 Parental Issues**

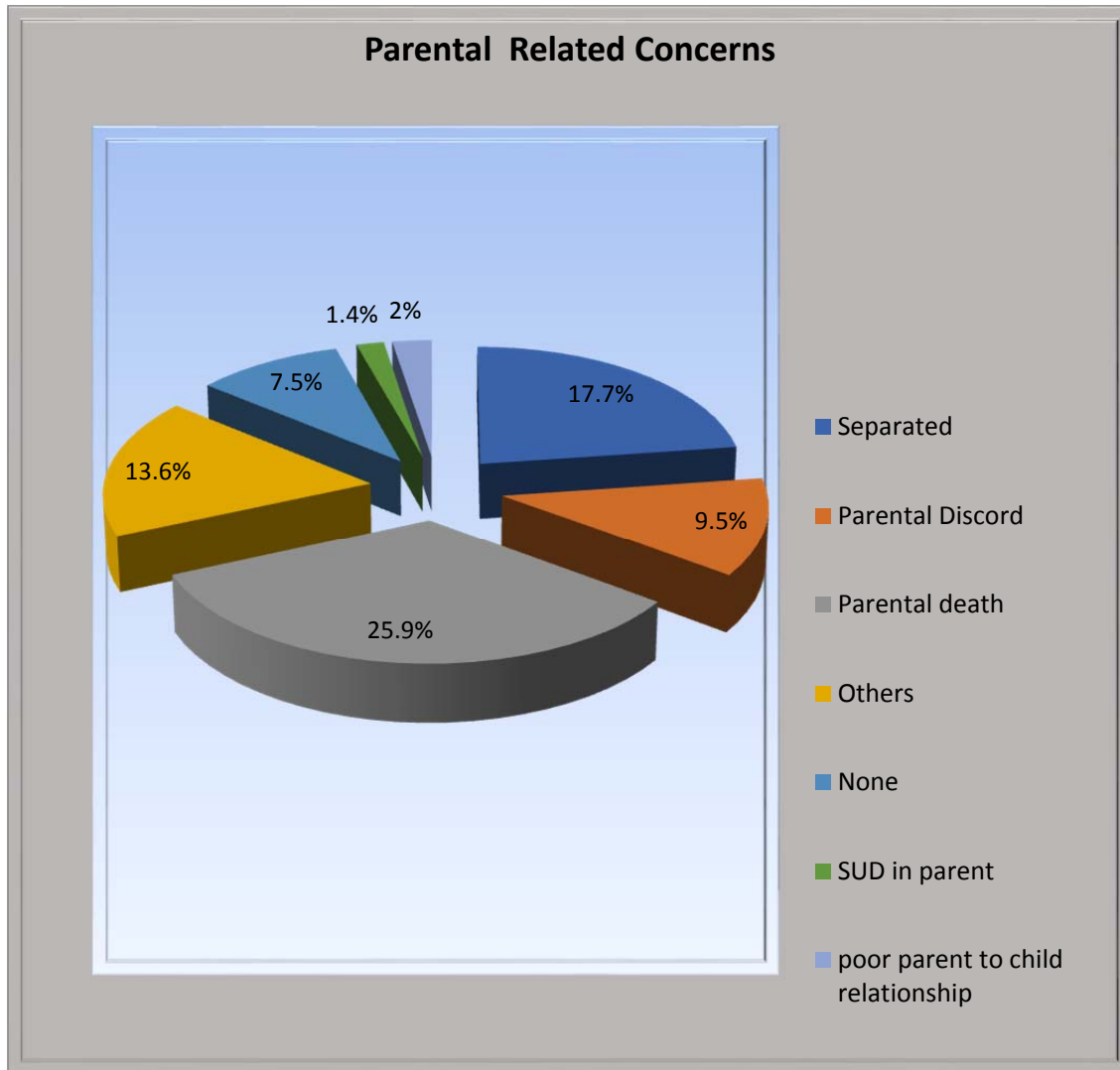
Table 4.5, shows the most reported parental issues by the adolescents diagnosed with conversion disorder for every year that data was reviewed retrospectively.

**Table 4. 5*****Common Reported Parental Issues***

Year	Variable	Frequency	Percent
March 2014- Feb 2015	Separated	2	6.3
	Parental Discord	1	3.1
	Parental death	19	59.4
	Others	5	15.6
March2015-Feb 2016	Separated	6	26.1
	Parental death	5	21.7
	None	3	13.0
	SUD in parent	2	8.7
	poor parent to child relationship	2	8.7
	None	3	13.0
March 2016 - Feb 2017	Separated	2	10.5
	Parental Discord	3	15.8
	Others	3	15.8
	None	8	42.1
	NR	3	15.8
March 2017 - Feb 2018	Separated	12	22.2
	Parental Discord	8	14.8
	Parental death	11	20.4
	poor parent to child relationship	1	1.9
March 2018- March 2019	Separated	4	21.1
	Parental Discord	2	10.5
	Parental death	3	15.8
	Others	8	42.1
	NR	2	10.5

#### 4.5.2 Overall Parental Concerns over the Study Period (March 2014-March 2019)

The most reported concern by the adolescents with conversion disorder regarding their parents was the demise of one or both of their parents. This was noted among 25.9 % of the respondents.



*Figure 4. 3: Parental issues among Adolescents with Conversion Disorder*

#### 4.5.3 Family Issues among respondents

The most reported concerns regarding families and the relationship dynamics within the family was communication problems 23.8%, (35), conflicts amongst family members 22.4%, (33) and illness in the family 19.7% (29) as presented in table 4.6.

**Table 4.6*****Common Family Issues among Adolescents with Conversion Disorder***

Covariate	Frequency	Percent
Communication problems	35	23.8
Sibling Rivalry	8	5.4
Only child	3	2.0
Conflicts	33	22.4
Illness in family	29	19.7
Financial Challenges	2	1.4
None	37	25.2
Total	147	100.0

**4.5.4 Association Between Family Challenges/ Issues, Gender and Age**

Gender was significantly associated with Family issues reported at  $P = 0.024$ . The females presented with most concerns. The effect of the impact of gender on the variable was strong at Cramer's  $V = 0.340$ . Age was also found to be highly significant at  $P=0.021$ . Respondents in Later adolescence seem to be presenting with more family issues. The effect of the impact of age on the variable was strong at Cramer's  $V = 0.343$ .

**Table 4.7**

**Association between Family Issues, Gender and Age**

Family Related Issues for Adolescents	Gender		Age	
	Male	Female	Mid Adol	Later Adol
Communication problems	12(9.5%)	23(18.3%)	10(7.9%)	25(19.8%)
Sibling Rivalry	6(4.8%)	2(1.6%)	7(5.6%)	1(0.8%)
Only child	0(0.0%)	3(2.4%)	1(0.8%)	2(1.6%)
Conflicts	5(4.0%)	28(22.2%)	13(0.3%)	20 (15.9%)
Illness in family	13(10.3%)	16(12.7%)	16(12.7%)	13(10.3%)
Financial Challenges	1(0.8%)	1(0.8%)	1(0.8%)	1(0.8%)
None	6(4.8%)	10(7.9%)	11(8.7%)	5(4.0%)
		$X_2=14.568$		$X_2=14.859$
		$df=6$		$df=6$
		$P\text{ values}=0.024$		$P\text{ values}=0.021$
		$Cramer's V=0.340$		$Cramer's V=0.343$

**4.5.6 School Issues Among Adolescents with Conversion Disorder**

The most reported concern regarding school was failure of exams by the adolescents who had conversion disorder 48.3%, (71). The next concern was adjustment issues in school (26.5%, (39); these are presented in table 4.8.

**Table 4. 8*****Common School Issues among Adolescents with Conversion Disorder***

Covariate	Frequency	Percent
Failure in Exams/ Fear of Failure in Exams	71	48.3
Suspension from School	6	4.1
Conflicts with Classmates	6	4.1
Being Bullied in School	7	4.8
Disliking Certain Subjects	3	2.0
Punishment by Teacher	3	2.0
Adjustment Issues	12	8.2
Others	39	26.5
Total	147	100.0

**4.5.7 Association Between School Related Challenges/ Issues, Gender and Age**

Gender was significantly associated with school related challenges reported at  $P = 0.001$ . The females presented with most school challenges especially fear of failing their exams. That was a major stressor. The effect of the impact of gender on the variable was very strong at Cramer's  $V = 0.427$ . Age was not significantly associated with school related challenges reported at  $P=0.382$ .

**Table 4.9*****Association between School Issues, Gender and Age***

School Related Issues for Adolescents	Gender		Age	
	Male	Female	Mid Adol	Later Adol
Failure in Exams/ Fear of Failure in Exams	15(10.6%)	56(39.4%)	35(24.6%)	36(25.4%)
Adjustment Issues	6(4.2%)	6(4.2%)	8(5.6%)	4(2.8%)
Suspension from School	6(4.2%)	0(0.0%)	1(0.7%)	5 (3.5%)
Conflicts with Classmates	2(1.4%)	4(2.8%)	3(2.1%)	3(2.1%)
Being Bullied in School	2(1.4%)	5(3.5%)	4(2.8%)	3(2.1%)
Disliking Certain Subjects	0(0.0%)	3(2.1%)	1(0.0%)	3(2.1%)
Punishment by Teacher	2(1.4%)	1(0.7%)	2(1.4%)	1(0.7%)
Others	18(12.7%)	16(11.3%)	17(12.0%)	17(12.0%)
		$X_2=20.136$		$X_2=7.464$
		$df=10$		$df=7$
		$P\ values=0.028$		$P\ values=0.382$

**4.5.8 Respondents' Abuse and Punishment History**

Most of the respondents had not experienced abuse of any form of abuse or punishment. About a fifth, 19% (28) of the respondents had been physically abused while 33.3% (49) had been punished, mostly at school; presented in table 4.10.

**Table 4.10**

***Abuse and Punishment***

<b>Abuse</b>	Frequency	Percent
Physical Abuse	28	19.0
Sexual Abuse	4	2.7
None	115	78.2
<i>Total</i>	<i>147</i>	<i>100.0</i>
<b><i>Punishment</i></b>	Frequency	Percent
Yes	49	33.3
No	98	66.7
<i>Total</i>	<i>147</i>	<i>100.0</i>

**4.6 Association and Correlation of psychosocial variables and Prevalence of conversion Disorder**

A Pearson chi-square test was done both in Cluster analysis per year and overall with data of over 4800 adolescents between the age of 13 to 19 years and there was no significant association between psychosocial variables and presence of conversion disorder with P values >0.05.

**4.7 Correlation between Variables**

There was a negative linear relationship between the age of the respondent and family issue ( $r = -.205, p = 0.021$ ). Implication being that the as the adolescents became older, then family issues increased. (More family issues signify genesis of conversion symptoms). There was a positive linear relationship between family issues and parental problems ( $r = -$



.375,  $p = \leq .001$ ). Which meant that increase in family issues meant an increase of parental problems among adolescents with conversion disorders.

A negative linear relationship was noted between gender and school issues ( $r = -.253, p = \leq .002$ ). This indicated that more female respondents seemed to have school problems compared to male respondents. There was a positive linear relationship between punishment and abuse ( $r = -.417, p = \leq .001$ ), implication respondents who were punished were probably most likely to report some form of abuse.

**Table 4.11**

*Correlation between Variables*

Covariate	Correlation	Age category	Gender	Parental Issues	Family Issues	School Issues	Abuse
Age category	Pearson Correlation						
	Sig. (2-tailed)						
	N						
Gender	Pearson Correlation	.007					
	Sig. (2-tailed)	.935					
	N	147					
Parental Issues	Pearson Correlation	-.102	-.164				
	Sig. (2-tailed)	.282	.080				
	N	114	114				
Family Issues	Pearson Correlation	-.205*	.003	.375**			
	Sig. (2-tailed)	.021	.976	.000			

	N	126	126	104			
School Issues	Pearson Correlation	-.062	-.253**	.134	-.080		
	Sig. (2-tailed)	.464	.002	.158	.373		
	N	142	142	113	126		
Abuse	Pearson Correlation	.011	.064	-.010	.080	-.001	
	Sig. (2-tailed)	.899	.449	.916	.374	.988	
	N	143	143	114	126	142	
Punishment	Pearson Correlation	-.001	.156	-.088	.085	-.100	.417**
	Sig. (2-tailed)	.992	.063	.353	.342	.235	.000
	N	143	143	114	126	142	143

\*. Correlation is significant at the 0.05 level (2-tailed).

\*\* . Correlation is significant at the 0.01 level (2-tailed).

## **CHAPTER FIVE: DISCUSSION, CONCLUSION AND RECOMMENDATION**

### **5.1 Discussion**

#### **5.1.1 Socio demographics of Respondents**

There are key socio-demographics that were noted. First, most respondents with conversion disorder were female. Studies that have been done on conversion disorders have established that generally there are more females with this diagnosis compared to males (Grant et al., 2015). However, in a study done by Huang et al., (2009), that looked into the sex distribution and psychiatric features of conversion disorder in children and adolescents over a period of 2 decades in Taiwan, it was determined that there was a changing trend whereby more recently a considerable number of males were also suffering from conversion. This adequately explains the almost insignificant difference in the ratio of male to female in this Kenyan retrospective study. It is however important to mention that the researchers in the Taiwan study noted that their sample size was small and probably a larger sample size could have given more inferable results. Grant et al., (2015) had conducted their baseline study in Canada.

This current study also found that most of the respondents who were diagnosed with conversion disorders were between the age of 13 to 19yrs (late adolescence). Although there are adolescents who get conversion disorder below the age of 12 years, it has been noted that similar to this study findings, the age range is in older adolescence as opposed to mid adolescence (Grant et al., 2015; Leary, 2003). These study findings have been reported in other studies that have focused on key symptoms of conversion disorders such as headaches, backaches and stomach aches.

Researchers in Europe and Canada found that these symptoms increased as adolescents became older (Stanford, E., Chambers, C., Biesanz, J., & Chen, 2008; van Gessel, H., Gassmann, J., & Kröner-Herwig, 2011). In a Nigerian study that looked at the prevalence of conversion in the South East Nigeria, the mean age of the respondents was 16.36 (SD) 3.14 years meaning that older adolescents were more affected or reported to be having CD (Nwokocha et al., 2017). However, Leary et al., (2003) in his study alluded to the fact that the probability of having late or mis-diagnosis is quite high as some of the conversion symptoms can be confused for other disorders like anxiety and depression.

### **5.1.2 Prevalence of Conversion Disorder Among the Adolescents**

This current study established that the prevalence of conversion disorder ranged from 1.39% - 6.94% in the study period 2014 to 2019. The lowest prevalence was noted in the year 2018 to 2019 while the highest prevalence was noted in the year 2017 to 2018. Essentially, the prevalence rates were within the lower range compared to other similar studies. As previously mentioned, in a systematic review that was done of globally published studies over a period of 10years, it was established that the prevalence rates ranged from 0.2% to 31% (De Cos, et al., 2016). The lower percentages were reported from western countries as opposed to the higher percentages which were said to reported from studies done in low income countries. As mentioned earlier, studies that have focused on particular presentations of conversion such as headaches and pain, reported prevalence rates between 12 to 15% (Petersen, S., Bergström, E., & Brulin, 2003; van Gessel, H., Gassmann, J., & Kröner-Herwig, 2011). Still implying that the study findings were low. Nwokocha et al., 2017) reported very high rates from their study sample in South East Nigerian study. They found that over 50 percent of the adolescents that were engaged in the study reported one symptom or another.

However, it is noted that studies on conversion disorders are scarce. For instance, in a more recent study that was done on the patterns of psychiatric disorders among children and adolescents over a period of 3 years in Nigeria, the following psychiatric disorders were diagnosed; ADHD (22.1%), and Depression (20.8%) (Chukwujekwu et al., 2019). Conversion disorder was neither assessed for or diagnosed amongst this population and yet it is commonly diagnosed among this population.

A plausible explanation to less diagnosis of conversion disorder among children and adolescents which explains the findings in the Nigerian study, is that there is poor knowledge of symptom recognition and diagnosis of the condition. According to Ndukuba et al., (2015), in their study they found that doctors had poor knowledge of conversion in children and adolescents. For the youth center where this current study was conducted, this problem could be exacerbated by the fact that mental health workers that are available to see the adolescents are counselors and nurses with experience in counseling but not diagnosis. This is based on the observation of the researcher whose positionality as a psychiatry registrar gives her an opportunity to see adolescents at the center in KNH. However, clearly more studies need to be done on conversion disorders among adolescents in Kenya to give comparable findings.

### **5.1.3 Presentation of conversion disorder among adolescents between the ages of 13 to 19yrs**

As for the common presenting complaints that were noted among adolescents with conversion disorders over the 5-year period; pseudo seizures or non-epileptic seizures (31.9%), Fainting (31.3%) and frequent cases of muscle weakness were reported by 8.3% of the respondents. Most of these respondents also reported headaches as the other symptoms accompanying the pseudo seizures and non-epileptic seizures, muscle weakness and fainting.

Gender was significantly associated with signs and symptoms at  $P=0.028$ . It was notable that females presented with pseudo seizure or non-epileptic seizures and motor weakness more than the male respondents.

Generally, some of the study findings have also been reported in the Canadian, German and Swedish studies mentioned can be noted in this current study. Most of the adolescents presented with headaches similar to this current study however, they were also presenting mostly with pain which wasn't common in this current study (Petersen et al., 2003; Qinglin et al., 2018; van Gessel et al., 2011).

Nwokocha et al., (2017) in their Nigerian study reported near similar results. Fifty-one-point eight percent (51.8%) had head features, 54.0% had body features, and 62.5% had either head or body features while 43.3% had both head and body features. Contrary to this current study finding, more male respondents reported the same symptoms.

#### **5.1.4 Psychosocial correlates among adolescents with conversion disorder at the youth clinic in KNH.**

With regards to psychosocial factors, the study found that there was a negative linear relationship between the age of the respondent and family issues the implication being that as the adolescents became older, then family issues increased. More family issues signify genesis of conversion symptoms in the study. These findings have been found in the studies that have been mentioned where symptoms of CD were notable among older adolescents (Stanford et al., 2008).

There was a positive linear relationship between family issues and parental problems where an increase in family issues meant an increase of parental problems among adolescents with conversion disorders. More female respondents seemed to have school problems compared to male respondents particularly with regards to failing their exams. Studies that looked at conversion in younger adolescents reported a link between recurrent stomach aches with problems at home (van Gessel et al., , 2011).

This current study also found that school issues was negatively correlating with gender in that more female respondents had negative school issues. In line with the findings that females seem to be more affected with CD Qinglin et al., (2018) in their study reported an increased number of females who were diagnosed with conversion disorder. Other studies have shown that performance in school has been affected by conversion disorder as it interferes with attention, executive function, and memory domains (Kozłowska, K., Palmer, D., Brown, K., Scher, S., Chudleigh, C., Davies, F., & Williams, 2015). The study concluded that children and adolescents with acute conversion symptoms have a reduced capacity to manipulate and retain information, to block interfering information, and to inhibit responses, all of which are required for effective attention, executive function, and memory.

Similarly, Deka et al., (2007) found that acute stressors like school examinations, changing of schools, joining of hostels could be identified in a large number of their cases with conversion disorders. There was a positive linear relationship between punishment and abuse implication being that respondents who were punished were probably most likely to report some form of abuse. Similarly, Sharma et al., 2005) earlier found that parenting, family conflicts, peer pressure and sibling rivalry were etiologies of conversion disorders.

Clearly there is need for more studies on conversion disorder among adolescents as there is serious paucity in empirical data.

## **5.2 Conclusion**

Psychosocial factors were prevalent and correlated among adolescents presenting with Conversion Disorder particularly family, school and parental problems.

## **5.3 Recommendation**

The study recommends that,

1. Screening and interventions for conversion disorder should be done for adolescents with psychosocial concerns but presenting with physical symptoms
2. Identification and management of conversion disorders should be well taught to other mental health workers to improve management
3. Psycho education for these disorders should be done for the patients which helps in their management and understanding of normal stressor management

## **5.4 Limitations and Suggestion for Further Studies**

There were missing files during data collection. Since the study was based on records, there were some files that were more comprehensibly recorded than others. The paucity of data on conversion disorder is outstanding. A prospective study will be important to support the findings reported by this current study. A different study site could be used to give a clear picture of the prevalence of conversion disorder in the country to allow for inference of the findings.



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## APPENDICES

### APPENDIX I: DATA ABSTRACTION FORM

CODE \_\_\_\_\_

1. Presenting complaints by

Patient \_\_\_\_\_

Caregiver/accompanying adult \_\_\_\_\_

2. Duration of symptoms \_\_\_\_\_

3. First episode of CD

Yes  No  Unknown

If no how many previous episodes? \_\_\_\_\_

4. Signs and symptoms present at diagnosis

Pseudo seizures or non-epileptic seizures Yes  No

Motor weakness Yes  No

Paralysis Yes  No

Anesthesia/paresthesia's Yes  No

Abnormal movements Yes  No

Abnormal gait Yes  No

Hearing disturbance Yes  No

Visual disturbance Yes  No

Abnormal or loss of speech Yes  No

Psychogenic cough Yes  No

Pain Yes  No

Fatigue Yes  No

Dizziness Yes  No



9. School issues

Failure in exams

Suspension from school

Conflicts with classmates

Being bullied in school

Disliking certain subjects

Punishment by teacher

Others \_\_\_\_\_

10. Abuse

Sexual

Physical

None

Other specify \_\_\_\_\_

11. Punishment

At home

At school

None

Other specify \_\_\_\_\_

12. Other psychosocial factors captured \_\_\_\_\_

## APPENDIX II: SOCIAL DEMOGRAPHIC QUESTIONNAIRE

CODE \_\_\_\_\_

1. Age in complete years
2. Sex: Female   
Male
3. Place of residence \_\_\_\_\_
4. Both parents alive  
Yes   
No   
Not specified   
Other (specify) \_\_\_\_\_
5. Relationship status of parents  
Married   
Separated   
Divorced   
Single   
Others (specify) \_\_\_\_\_
6. Occupation of parents (either father or mother)  
Employed   
Not Employed   
Self Employed   
Don't know   
Other (specify) \_\_\_\_\_

7. Number of siblings \_\_\_\_\_

8. School status

In school    Yes     No

Primary \_\_\_\_\_

Secondary \_\_\_\_\_

9. Religion

Christian

Non-Christian

Not specified



## APPENDIX III: CURRICULUM VITAE

### DR LINET KENDI MBAE

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##### PROFILE

A passionate doctor with 6yrs experience in clinical practice

##### EDUCATION

##### UNIVERSITY

MBChB

Kampala International University

2006-2012

##### SECONDARY

Kyeni Girls High school  
2002-2005

##### SKILLS

EMOC ( Emergency Obstetric Care and Treatment)  
Addiction management

##### EXPERIENCE

##### MEDICAL OFFICER

Igegania Level 4 Hospital (2013-2016)

- Conducted Continuous Medical Education
- Offered curative, diagnostic and preventive services
- Performed major and minor operations

##### MEDICAL OFFICER INTERN

Mathari Mission Hospital (2012-2013)

- First on call doctor
- Clerkship of patients
- Monthly mortality reviews