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*The Differences in Somatoform Disorder in Terms  
of Age and Gender among patients at Khartoum  
Hospitals' state.*

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**Abstract:**

This study aimed to reviewing the differences between somatoform disorder (somatomization) in term of age (children below 18 years and adults above 18 years) and gender (male/female). Two sources of data used; the first source is the previous studies to use in the systematic review. The second part was the quantitative sources in which information list was used through which information about age distribution and gender of the patients during the period from January to December( 2014) which were obtained from practioners in the field of psychology who working in psychological health hospitals in Khartoum State. The collected data analyzed using Statistical Packages for Social Sciences (SPSS), calculating the percentages and the differences by chi squire test. The study revealed that there are significant differences between children below 18 years and adults above 18 years. In addition, there is a significant difference in somatoform disorder among Sudanese patients male and female in mental Health Hospitals in Khartoum State.

**Key words:** somatization, somatoform, children, adult, mental health.

**Introduction:**

Somatic symptom disorder (SSD) characterized by somatic symptoms that are either very distressing or result in significant disruption of functioning, as well as excessive and disproportionate thoughts, feelings and behaviors regarding those symptoms. To be diagnosed with SSD, the individual must be persistently symptomatic (typically at least for 6 months) (dsm5. Internet1 accessed on 21.3.2015) Somatization or Somatic Symptom Disorder (SSD) is a poorly understood “blind spot” of Medicine (Quill, 2000). Somatoform disorders remain neglected despite functional impairment and economic burden. Conceptual and clinical questions exist about the validity and utility of the concepts, new paradigms might lead to effective management (Mayou, *et al.* 2003).

child (plural: children) is generally a human between the stages of birth and puberty. Child may also describe a relationship with a parent such as sons and daughters of any age (American Heritage, 2007). An adult is a human being or other organism that has reached sexual maturity. Conversely, one may legally be an adult but possess none of the maturity and responsibility that may define adult character (Maranz, 2010).

Mental hospitals and psychiatric wards ("psych" wards) when they are a sub-unit of a regular hospitals or wards specializing in the treatment of serious mental disorders, such as clinical depression, schizophrenia, and bipolar disorder ( Thomas, 2011).

One of the psychiatric diagnoses, that there are many controversies about its diagnostic criteria, is somatoform disorders. Medically unexplained symptoms categorized as ‘somatoform disorders’ in both DSM-IV and ICD-10 (Rief *et al* 2007)

The name of this diagnostic criterion criticized (Starcevic 2006). Instead, new names such as functional somatic syndromes, and psychosomatic distress syndromes are suggested (Starcevic 2006). Meanwhile, medicine calls these problems as Functional Somatic Syndromes (Wessely *et al.* 1999). Moreover, there is a wide heterogeneity in the group of somatoform disorders. For example, Body Dimorphic Disorder is completely different from other subcategories (Starcevic 2006).

Neurobiological and psychodynamic approaches are two explanatory models for such medically unexplained disorders called

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somatoform disorders by DSM-IV. These two approaches are representative of two complementary subjective and objective perspectives. Until present time, no satisfactory biological model has offered to explain the quality of interaction between the mind and the body, which result in the signs and symptoms of patients with somatoform disorders. Psychiatry community has had to classify them according to a superficial criterion. This approach has had a number of difficulties in the management of patients especially among third world physicians who have had to rely on their talents and expertise rather than technology and among the patients living in the countries which expression of emotions suppressed. In these countries, the physicians have learned to think about depression as the first diagnostic hypothesis before to think about somatoform disorders (Seifsafari et al. 2012).

Goulia, *et al.* (2012) compared the level of psychological distress between younger (< 65 years) and older ( $\geq$  65years) patients with chronic medical conditions attending hospital specialty clinics and to test whether a different pattern emerges when comparisons with individuals without long-term conditions are made, they concluded that medical patients from both age groups had significant psychological distress symptoms scores. Younger patients with chronic medical illnesses were more vulnerable to severe psychological distress, including symptoms of anxiety, depression, hostility and somatization. Bergander, *et al.* (2013) examined whether there were systematic differences between young and old pain patients, they found that younger chronic pain patients suffer more from a considerable amount of psychological distress than older ones, but our treatment approach was equally effective in both groups.

Ladwig, *et al.* (2001) screened occurrence of somatization they found that somatization risk was only 1.6-fold higher for women in comparison to men but escalated for women rapidly to an approximately 4-fold risk when being female was combined with low social class and high emotional distress. Against expectation, the somatization risk for men also mounted 3-fold under the identical risk constellation. Another study by Barsky, *et al.* (2011) showed that there are number of contributory factors have been implicated, supported by varying degrees of evidence. These include innate differences in somatic and visceral perception; differences in symptom labeling, description, and reporting; the socialization process, which leads to differences in the readiness to acknowledge and disclose discomfort; a sex differential in the incidence

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of abuse and violence; sex differences in the prevalence of anxiety and depressive disorders; and gender bias in research and in clinical practice. The Systematic review by Creed and Barsky (2004) showed that in population-based studies the prevalence of somatization disorder and hypochondriasis was too low to examine associated features reliably. In studies using abridged criteria, a clear female predominance not found in either disorder; there was a consistent relationship with few years of education. There was a close relationship with anxiety and depressive disorders, with a linear relationship between numbers of somatic and other symptoms of distress in several studies, including longitudinal studies. An example is the abridged form of somatization labeled Somatic Symptom Index (SSI) introduced by Escobar *et al.* (1989) defined as four symptoms in males and six in females, for which lifetime rates between 3% in adolescents and young adults (Lieb, *et al.* 2007) and 4.4–20% in adults (Rief, *et al.* 2001) have been reported.

Studies related to somatization in Sudan such as El-Haj (2000) conducted study aimed to investigate the relationship between life stress and somatoform disorders among married patients in Khartoum State, her findings showed that the responses of patients with somatoform disorder towards feeling of distress, hygiene, and financial stress were negative. There are significant differences in gender and age of patients. Another study by Mustafa (2004) showed that four Sudanese universities between the ages of 20 and 40 divided into group A and group B, it found that there was a positive impact of religiosity on the total selected subjects. It also found that the females were more likely to show positive religious impact than their male counterparts were. This factor served to indicate that the females suffer more from psychological and neurotic disorders than males. It was also noted not only a negative correlation between religiosity and hysteria but also between religiosity, phobia, and hypochondria. The data analysis also suggested a positive correlation between religiosity and compulsive on one hand, and absence of correlation between gender, religiosity and neurotic disorders on the other hand. A third study by Yahya (2007) among hypertensive patients with somatoform disorder showed that there is significant differences among the sample in relation age group, gender, marital status and educational level.

According to four basic-emotion command systems introduced by Panksepp (Solmes & Turnbull 2002), the emotional turmoil of

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somatoform patients released via bodily symptoms, explained based on reward, rage, fear and panic systems. For instance, the inexhaustible complaints of patients with somatization disorder can be explained by reward system and the need of these patients for attention and care whereas the hypochondriac patients can be understood as individuals with a hidden rage rooted in childhood frustrations. Similarly, the behavior of patients suffering from factitious disorder can be referred to a disturbance in panic (separation-distress) system. Different types of emotions lead to different presentations of bodily symptoms. These basic emotions in combination with the effects of environmental influences especially in the early childhood are responsible for different presentations of medically unexplained symptoms. Previous studies found that there are significant differences in somatoform disorder in terms of gender. Bener, *et al.* (2010) revealed that the prevalence rate of somatoform disorders among the total screened sample was 23.9%. The prevalence rate was slightly higher in Qatari women (24.2%) than in Qatari men (23.7%). Housewives (43.5%) and men in administrative posts (37.9%) reported higher somatic symptoms compared to other professions. Prolonged depressive reaction was significantly higher in women compared to men. There was a significant gender differences in certain psychiatric diagnostic categories such as depressive episode, recurrent depressive disorder, dysthymia, and brief depressive reaction. Backache was the most common reported symptom in men, whereas headache was more common in women. Kroenke and Spitzer (1998) showed that all symptoms except one were reported more commonly by women, with the adjusted odds ratios (typically in the 1.5-2.5 range) showing statistically significant differences for 10 of 13 symptoms. Somatoform (ie, physically unexplained) symptoms were also more frequent in women. Although depressive and anxiety disorders were the strongest correlate of symptom reporting, gender had an independent effect that persisted even after adjusting for psychiatric comorbidity. Gender was the most important demographic factor associated with symptom reporting, followed by education.

Margout, *et al.* (2004) found that the prevalence of somatoform disorders 16.1%. When disorders with only mild impairment were included, the prevalence increased to 21.9%. Comorbidity of somatoform disorders and anxiety/depressive disorders was 3.3 times more likely than expected by chance. Inpatients with comorbid disorders, physical

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symptoms, depressive symptoms and functional limitations were additive. Houang, *et al.* showed that total of 42 patients diagnosed with conversion disorder were included in this study. Nineteen of the 42 subjects were diagnosed in the first decade (from 1987 to 1996), and 23 in the second decade (from 1997 to 2006). There existed among patients a tendency toward an increasing number of male subjects, suffering more abuse, and higher prevalence rates of depression and dysthymia co morbidity in the second decade compared to the first. Although many researchers are concerned with the somatoform disorder. However, the individual differences in somatoform disorder in terms of age and gender not extensively studied particularly in Sudan. Thus, the current study is a systematic review to explore the differences between somatoform in individual differences in age and gender among patients in Khartoum State Mental Hospitals. In addition, practioners will obtained from different psychological health hospitals in Khartoum State.

This study aims to know the differences between children below 18 years and adults above 18 years in somatoform disorder. In addition, to know the differences between gender (male/female) in somatoform disorders.

### **Methodology:**

**Study design:** This is an observational study data obtained at mental hospitals, using Quantitative design. It conducted in three of mental health hospitals in Khartoum state.

**Study population:** The study population of this study included children (girls and boys) and adults (males and females) suffers for somatoform mental health hospitals in Khartoum state.

**Study sampling:** The study sample consisted of 50 practitioners who were systematically selected mental health hospitals in Khartoum state.

**Tools of data collection:** two sources of data used for data collection. The first tool was the preview studies used in the systematic review. The second tool was the information list about age distribution and gender of the patient during the period from January to December 2014 obtained from practioners in the field of psychology who are working in mental hospitals in Khartoum state.

**Procedure of data collection:** The researcher went to the mental hospitals during the period of morning in order to collect the data

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needed. The study made in the period from October (2014) to March (2015).

**Data analysis:** The data collected through from data record analyzed using Statistical Packages for Social Sciences (SPSS), calculating the percentages and the differences by chi square test. Data sources and searches: A detailed literature search was conducted using electronic databases including PubMed, MD Consult, and PsycINFO from their inception through December( 2014) to January( 2015). Fifteen studies from (1995) to (2013) selected. All designs of studies on SSD patients considered. The following search key terms used: Somatic Symptoms Disorder, Somatization, and Somatoform Disorder. Articles printed in English and Arabic languages were included. Once studies were retrieved, abstracts were screened, followed by full-article review and assessment for inclusion. The researcher also manually searched the reference lists of the included studies to ensure a comprehensive search of the literature. Studies appraised and selected by the researcher. Disagreements on the inclusion/exclusion of the study solved by consultation with the supervisor

**Study Selection for systematic review:** Related studies were included considering that study population in terms of gender and age variables is clearly defined, the study had at least 1 of the study variables as somatomization, sex, age and identified clear outcomes .

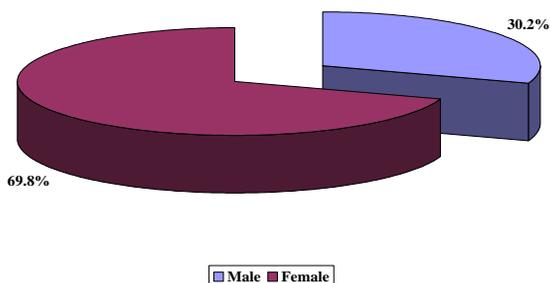
**Ethical considerations:** The researcher took the permission from the administration of the hospitals to allow her to obtain the needed data before the start of the study. In addition, patient consent obtained.

**Results and Discussion:** The first hypothesis stated that there are significantly statistical differences in somatoform (somatomization) among Sudanese patients in terms of gender (male/female). To test this hypothesis answers of the practioners analyzed and the results in Table (1) and Figure (1) illustrate this process:-

**Table (1)**

**Distribution of somatization patients attending the three mental hospitals in Khartoum during the period (January to December 2014) according to gender**

Gender	Number	Percent	Chi square	Df	P value	Conclusion
Males	139	30.2%	72.644	1	0.001	Significant difference in somatization according to gender (male/female)
Females	322	69.8%				
Total	461	100.0%				



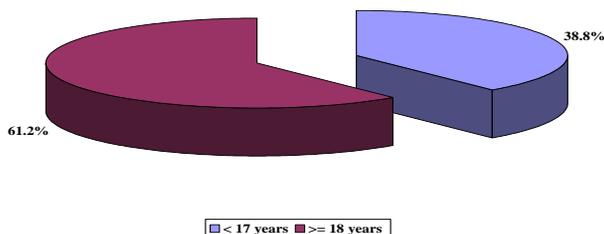
**Figure (1) Distribution of somatoform disorders among male and females (January to December 2014 in Mental Health Hospitals in Khartoum State)**

According to the findings in Table (1) the percentage of females attended the three hospitals with somatization during the period (January – December 2014) was greater than males (69.8% females versus 30.2% males. Moreover, chi square value was 72.644 with P value (0.001) at significant level of (0.05), Which indicates that somatization among Sudanese patients is significantly more common among females than males ( $P < 0.05$ ).

The second hypothesis stated that there is significantly statistical difference in somatization according to age among Sudanese patients between children below 18 years and adults above 18 years. To test this hypothesis, the practitioners’ answers were analyzed and the results are shown in Table (2) and Figure (2)

**Table (2)  
Distribution of somatization patients attending the three hospitals during the period (January to December 2014) according to age**

Age	Number	Percent	Chi square	Df	P value	Conclusion
< 17 years	179	38.8%	23.013	1	0.001	Significant difference in somatization according to age (less than 18 years / 18 years and above)
>= 18 years	282	61.2%				
Total	461	100.0%				



***Figure (2) Distribution of somatoform disorders among children and adults (January to December 2014 in Mental Health Hospitals in Khartoum State)***

According to the findings in Table (2) the percentage of patients aged 18 years and above attended the three hospitals with somatization during the period (January – December 2014) was greater than those aged less than 18 years (61.2% aged 18 years and above versus 38.8% aged less than 18 years). Moreover, chi square value was 23.013 with P value (0.001) at significant level of (0.05), Which indicates that somatization among Sudanese patients is significantly more common among ages of 18 years and above than ages less than 18 years ( $P < 0.05$ ).

According to above findings, the survey of the somatization patients attended three of the mental health hospitals in Khartoum State (January – December 2014) showed that this disorder was significantly different according to variables of age and gender, where females and older ages showed more cases of somatization than males and younger patients ( $P < 0.05$ ). These findings in part of age agreed with the studies extracted in the systematic review, while in gender differences, some studies showed that somatization more common among males than females. Goulia, *et al.* (2012) compared the level of psychological distress between younger ( $< 65$  years) and older ( $\geq 65$  years) patients with chronic medical conditions attending hospital specialty clinics and to test whether a different pattern emerges when comparisons with individuals without long-term conditions are made, they concluded that medical patients from both age groups had significant psychological distress symptoms scores. Younger patients with chronic medical illnesses were more vulnerable to severe psychological distress, including symptoms of anxiety, depression, hostility and somatization. Bergander, *et al.* (2013) examined whether there were systematic differences between young and

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old pain patients, they found that younger chronic pain patients suffer more from a considerable amount of psychological distress than older ones, but our treatment approach was equally effective in both groups. Kurt, *et al.* 1998, assessed gender differences for specific symptoms and to assess how much of these differences were attributable to psychiatric comorbidity, they revealed that most physical symptoms are typically reported at least 50% more often by women than by men. Ladwig, *et al.* (2001) screened occurrence of somatization, they found that somatization risk was only 1.6-fold higher for women in comparison to men but escalated for women rapidly to an approximately 4-fold risk when being female was combined with low social class and high emotional distress. Against expectation, the somatization risk for men also mounted 3-fold under the identical risk constellation. Another study by Barsky, *et al.* (2001) showed that there are number of contributory factors have been implicated, supported by varying degrees of evidence. These include innate differences in somatic and visceral perception; differences in symptom labeling, description, and reporting; the socialization process, which leads to differences in the readiness to acknowledge and disclose discomfort; a sex differential in the incidence of abuse and violence; sex differences in the prevalence of anxiety and depressive disorders; and gender bias in research and in clinical practice. The Systematic review by Creed and Barsky (2004) showed that in population-based studies the prevalence of somatization disorder and hypochondriasis was too low to examine associated features reliably. In studies using abridged criteria, a clear female predominance not found in either disorder; there was a consistent relationship with few years of education. There was a close relationship with anxiety and depressive disorders, with a linear relationship between numbers of somatic and other symptoms of distress in several studies, including longitudinal studies. An example is the abridged form of somatization labeled Somatic Symptom Index (SSI) introduced by Escobar *et al.* (1989), defined as four symptoms in males and six in females, for which lifetime rates between 3% in adolescents and young adults (Lieb, *et al.* 2007) and 4.4–20% in adults (Rief, *et al.* 2001) have been reported.

**Conclusion:** Based on the findings and discussion of this study, the researcher concluded that there are significant differences between children below 18 years and adults above 18 years in somatoform disorder among Sudanese patients in mental Health Hospitals in

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Khartoum State. In addition to that, there is a significant difference in somatoform disorder among Sudanese patients male and female in mental Health Hospitals in Khartoum State.

**Recommendations:**

- 1- Conduct new instruments and scales for diagnosing somatoform disorder and adapt it for Sudanese society.
- 2- Raise awareness through mass media to the community about somatoform disorder.
- 3- Conduct workshops to build capacity of somatoform patients to improve their quality of life.
- 4- The study recommends that more efforts by psychologists and psychiatrists are needed to reduce the rates of somatoform disorder among patients to prevent further functional impairment.
- 5- Future studies about somatoform disorders in Sudan should be conducted to fill the gaps in this area (culture concept and prevalence).

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