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# Somatoform Disorder: Treatment Utilization and Cost by Mental Health Professions

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ABSTRACT

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Cost by Mental Health Professions

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Somatoform disorder is a prevalent mental health disorder in the United States. This disorder costs the United States one billion dollars annually. Medical providers report somatoform disorder is difficult to treat. Previous studies have shown that Cognitive Behavioral Therapy (CBT) is effective at reducing symptoms of somatoform disorder. Unfortunately, little research has been done on treatment outcomes and cost of somatoform disorder, particularly by profession to reduce health care costs for somatoform patients and providers. Administrative data from CIGNA for 149 somatoform disorder cases were analyzed to determine the cost, number of sessions, dropout rates, and recidivism rates for somatoform disorder. These same variables for somatoform disorder were also analyzed by profession for medical doctors, psychologists, master's nurses, master's social workers, marriage and family therapists, and professional counselors. Descriptive statistics showed that the recidivism rates and number of sessions for somatoform disorder is higher than average. Drop-out rates were consistent with the average. Analyses revealed no significant difference in total cost by profession, but did indicate a significant difference in cost per session for medical doctors. Analyses indicate lower level (M.S.) providers have no significant difference in drop-out rates and recidivism rates compared to higher level (Ph.D.) providers.

Keywords: somatoform, somatization, cost, mental health

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## Introduction

Somatoform disorder consists of physical complaints that cannot be fully explained by a known medical condition or substance use. This is different from psychosomatic disorders that consist of a disease caused or exacerbated by psychological factors (Kellner, 1994). Unlike psychosomatic disorders, somatoform disorder is not a physically or medically identifiable or testable illness. According to the DSM-IV diagnosis for Somatization Disorder (300.81), in order for an individual to be diagnosed with the disorder the there must be a history of pain in at least four different areas of the body as well as two gastrointestinal dysfunctions and one sexual dysfunction (American Psychiatric Association, 2000). Somatoform disorder typically results in functional and/or social impairment (Barsky, Orav, & Bates, 2005). Physicians report somatoform disorder as difficult to treat and patient dissatisfaction for the treatment of somatoform disorder is high (Kroenke et al, 1997).

Several studies have shown somatoform disorder to be very prevalent in the United States (De Waal, Arnold, Eekhof, & Van Hemert, 2004; Kroenke et al, 1997; Roca et al, 2009). Somatoform disorder affects 10 to 15 % of primary care patients (Kroenke et al, 1997). In a two-stage prevalence study with 1,046 patients of general practitioners, somatoform disorder was found to have a prevalence of 16.1 %. When only mild impairment cases were included, the prevalence reached a high of 21.9 %. In the same study, those with somatoform disorders were 3.3 times more likely to have a comorbidity with anxiety and depressive disorders than expected (De Waal, Arnold, Eekhof, & Van Hemert, 2004; Roca et al, 2009). A study done by Roca et al (2009) showed somatoform to be the most prevalent psychiatric disorder in Spain even compared with diagnoses of depression and anxiety.

Somatoform disorder accounts for approximately 1 billion dollars of the expenses in America's current health care system annually (Barsky, Orav, & Bates, 2005) and Americans with somatoform disorder have nine times more medical expenses than the average American (Harvard, 2009). No differences in prevalence by gender, age, or ethnicity have been found. With such a high prevalence of somatoform disorder in the United States and its high medical costs, it is imperative that research be done on the best, cost-effective method of treatment in order to reduce medical costs for both individuals and for America's health care system.

Starting at the turn of the century, health care professionals began turning to psychotherapy for treatment of somatoform disorders (Kroenke & Swindle, 2000). Several studies have tested the treatment outcomes of psychotherapy treatment modalities such as cognitive behavioral and psychodynamic therapies (Allen, Woolfolk, Escobar, Gara, & Hamer, 2006; Harvard, 2009; Kraft, Puschner, Lambert, & Kordy, 2006; Kroenke, 2007; Kroenke & Swindle, 2000; Sumathipala, 2007; Tazaki and Landlaw, 2006). Cognitive behavioral therapy has been shown to be an effective treatment modality for reducing somatic complaints and improving the overall functionality of somatoform patients (Allen et al, 2006; Harvard, 2009; Kraft et al, 2006; Kroenke, 2007; Kroenke & Swindle, 2000; Sumathipala, 2007; Tazaki and Landlaw, 2006).

Although several studies have examined the effectiveness of psychotherapy treatments for somatoform disorders, no research has examined the cost-effectiveness for treatment of somatoform by license type of the therapy provider. Crane and Payne (in press) found significant differences in the outcome and costs for different types of mental health provider types across multiple mental health diagnoses. Using the number of sessions, dropout rates, cost, and recidivism data, Crane and Payne found that the cost-effectiveness of treatment was ranked

with professional counselors as the most cost-effective followed by marriage and family therapists (MFT's) and medical doctors (MD's), Master's social workers (MSW's), followed by Master's level nurses. The least cost-effective were psychologists. The purpose of the present study is to compare the cost-effectiveness of the treatment of somatoform disorder by profession for the six above mentioned nationally licensed mental health professions in a managed care environment in order to reduce costs for the treatment of somatoform disorder for the United States health care systems, patients, and insurance companies. If Master's level providers can treat these patients as effectively as more expensive providers, there could be significant cost savings in health care.

## Review of Literature

### *Background*

Physical symptoms with no medical explanation have been present throughout history. For the last 200 hundred years these symptoms have been traced to a psychological foundation with little knowledge of its origins. For decades, researchers have attempted to develop a theory that explains this psychological phenomenon. According to Brown (2004) medically unexplained symptoms have historically been explained by theories of dissociation, conversion, and recently by theories of somatization. Brown (2004) created an integrated model, using the above mentioned theories, attributing somatoform disorder to the wrong selection of cognitive information during attentional and control processing. More specifically, Brown attributes somatic complaints to attention focused on symptom(s). This is created or maintained by various biological and psychosocial elements including but not limited to negative affect, personality, beliefs, behaviors, misinterpretations, and worry.

*Psychotherapy*

*Cognitive Behavioral Therapy*. To this day, researchers are continuing to try and understand the psychological and physiological origins of somatoform disorder. With so many unknowns, physicians and mental health providers have found somatoform disorder difficult to treat. At the beginning of the 21st century researchers began looking at psychotherapy treatment for somatoform disorder. The most effective of these seems to be Cognitive-Behavioral Therapy (CBT). In a review of 34 randomized controlled trials, CBT was shown to be the most effective form of treatment for various somatoform disorders and somatization compared to antidepressants, primary care physician consultations, nurse care management interventions, and other forms of therapy (Kroenke, 2007). With a median of 8 sessions for the treatment, CBT was shown to reduce symptoms of somatoform disorder in 11 out of 13 clinical trials.

In a large review of 13 systematic reviews and 421 randomized controlled trials in primary, secondary, and tertiary settings, the effectiveness of various treatments for somatoform disorders and somatization were compared. The review looked at antidepressants, cognitive-behavioral therapy (CBT), psychodynamic therapy, family therapy, and consultation letters. CBT was more effective in improving physical and social functioning than the other treatments and has been shown to reduce physical symptoms of somatoform disorder and reduce psychological distress (Sumathipala, 2007). In fact, 31 of the randomized controlled studies that produced evidence for CBT as an efficacious treatment for somatoform disorder were critically reviewed by Kroenke and Swindle (2000). Physical symptoms, psychological distress, and functional status were assessed and results showed that patients treated with CBT did better in these three areas than the control patients in 22 (or 71%) of the studies.

In 2006, Allen et al conducted a study using eighty four individuals diagnosed with somatoform disorder. The individuals were randomly assigned into one of two groups with the first group receiving a standard medical care with psychiatric consultation while the second group received a 10 session CBT treatment. The Clinical Global Impression Scale for Somatization Disorder, self-report, health care utilization, and clinical ratings were used to determine outcome. Outcome was measured at baseline as well at 3, 9, and 15 months. The CBT group showed far greater improvement than those receiving standard medical care. After fifteen months, those treated with CBT reported a greater decrease in health care cost, better functioning, and a reduction of somatic symptoms. These individuals were also more likely to receive higher clinical ratings of improvement as well as .84 less points on the Clinical Global Impression Scale than those in the standard medical group indicating a move toward a non-clinical range of symptoms.

*Family Therapy.* Family therapy is a treatment modality that has been used to treat various individual mental health diagnoses (Kaslow, 2000). Unfortunately, little research has been done to explore the efficacy of family therapy for the treatment of somatoform disorder. One study conducted by Real et al. (1996) used family therapy for 18 patients who suffered from somatoform disorder for 1 year or more. Brief strategic family therapy was given to all 18 patients with sessions ranging from 1 to 11 with an average of 4.6 sessions. Success was achieved in 61.1 % of the patients who received family therapy with 27.8 % failure and an 11.1 % dropout rate.

*Cost*

Somatoform disorder is a difficult and expensive disorder to treat making health care costs high for patients and the health care system. Crane and Payne (in press) found significant

differences in the outcome and costs for different types of mental health provider types across multiple mental health diagnoses. These differences in both outcome and costs could help the insurance providers find the most successful treatment provider for somatoform patients thereby decreasing costs. Unfortunately, no studies have been done on the treatment outcomes of somatoform disorder by provider type.

*Drop-Out & Cost*

Drop-out can affect the outcomes and cost of treatment. Wierzbicki and Pekarik (1993) define drop-out as "premature termination" in psychotherapy services. After reviewing over 125 studies on psychotherapy drop-out rates, Wierzbicki and Pekarik found the average psychotherapy dropout rate to be 46.86 %. Hamilton, Moore, Crane, and Payne (2010) also found that the dropout rate for mental health diagnoses is relatively high. Using data for over 434, 317 patients from CIGNA Behavioral Health, these researchers examined dropout rates by diagnosis, therapy modality, and provider type. Results showed that mood disorders have a higher dropout rate than other diagnoses, marriage and family therapists (MFTs) have the lowest dropout rate by profession, and that individual therapy has fewer dropouts than family therapy approaches. Unfortunately, even with the prevalence of such dropout research no research on dropout rates for the treatment of somatoform disorder has been located. When clients of somatoform disorder elect to drop-out of psychotherapy treatment, many of these clients may be returning to receive other more costly forms of clinical and diagnostic services such surgeries and exploratory procedures. Health care costs could benefit from keeping patients of somatoform disorder in psychotherapy treatment, in order to reduce the use of these other more costly methods of treatment.

With so much research located on the effectiveness of treatment for somatoform disorder, it is surprising that no research has been published on the cost of treatment for somatoform disorder. The question still remains of how to best reduce the cost of treatment for such a prevalent disorder. The present study seeks to better answer that question by looking at the cost-effectiveness of treatment for somatoform disorder by profession.

*Research Questions*

Although CBT has been studied regarding the cost effectiveness of various treatment modalities for somatoform disorder, little has been studied regarding the cost effectiveness of the treatment of somatoform by profession. Determining cost-effectiveness of the treatment of somatoform by profession may help indicate whether less costly (MS) professions (e.g. MFT's, MSWs, Master's Nurses) can provide successful treatment for somatoform compared with the more costly (Doctoral) professions (e.g. psychologists, MDs), as well as improve drop-out and recidivism rates keeping somatoform patients out of other more costly medical procedures and services, thereby lowering the cost of the treatment of somatoform disorder overall. The following research questions will help to fill this gap in the literature:

1. What are the total number of sessions and total cost in the first Episode of Care for somatoform disorder across all professions?
2. What are the number of sessions and cost of the first Episode of Care by profession for Somatoform disorder?
3. Is there a difference in total cost and cost per session of the first Episode of Care by profession for somatoform disorder?
4. Which profession has the lowest drop-out rate for somatoform disorder?
5. Which profession has the lowest recidivism rate for somatoform disorder?

6. Is there a difference in drop-out and recidivism rates for provider degree level (Master's, vs. doctorate)?

## Method

*Sample*

Subjects were taken from CIGNA, one of the top insurers of health care in the United States. Claims for the clients diagnosed with somatoform disorder (DSM-IV 300.81) as the primary diagnosis who were insured by CIGNA from six years of data (2001-2006) are included in this study.

Each entry or line represents one claim filed by a therapist. These claims lines contain the following information:

1. A patient identification number unique to each patient.
2. Date of outpatient service
3. Amount paid for the claim
4. ICD 9 diagnoses
5. Patient gender
6. Patient's age on date of service.
7. Service location by U.S. state
8. Outpatient type of service (individual therapy (90806), family therapy (90847))
9. Number of outpatient visits billed
10. Provider license(s)

The subjects represent the entire population of U.S. patients receiving outpatient mental health care managed by CIGNA for somatoform disorder from 2001 to 2006. The claims for somatoform disorder were 149 (N=149). The age range for patients in the data set is from 6 to 72

(M= 33.91, SD= 17.03). The data set contained 103 females and 46 males. Patients from a majority of the fifty states were included in the data.

The use of this data is permitted by the Health Insurance Portability and Accountability Act of 1996 (HIPAA) regulations for protecting personal health care information. It is not possible to identify any unique subscriber or provider information from the data provided. A unique and nonidentifiable client identification number was put in place for each patient before the data was examined in this study.

Therapist licenses are reported in the data for 6 different nationally recognized, specific licenses including professional counselors (LPC), marriage and family therapists (MFT), MDs, psychologists, nurses, social workers and psychiatrists. These six specific license types were selected because they are nationally recognized as independently licensed health care practitioners.

*Data*

The six years of data were combined in a database where each patient was assigned a unique patient ID. For a complete explanation of the data cleaning procedure see Crane and Payne (in press). The sample included 149 patients diagnosed with somatoform disorder from 2001 to 2006. In order to keep the sample homogeneous, only individuals with somatoform disorder (DSM-IV 300.81) are included, not individuals with unspecified symptoms (DSM-IV 300.82).

*Definitions and Procedure*

*Episodes of Care (EoC).* According to CIGNA EoC is defined as a series of services for the same patient that is continuous. An EoC began with the first psychotherapy service and

ended once the individual had no psychotherapy claims for 90 days or more. The number of sessions in the first EoC per patient in the data set ranged from 1 to 73 (M=9.09, SD=13.25).

*Success and Recidivism*. Success and recidivism are calculated from the first EoC for the purposes of this study. Success in terms of recidivism is defined as those patients who used only one EoC within the time frame of the study (6 years). Recidivism is defined as any patient who returned to therapy for a second EoC with the same provider type and the same DSM-IV diagnosis.

*Drop-Out.* Drop-outs are defined as individual who attend one treatment session and did not return for treatment for any reason (Hamilton et al, in press). Success in terms of drop-out is defined as patients who return for more than one session during the first EoC.

*Services and Diagnoses*. Psychotherapy charges billed for individual or family therapy were available in the data. The claims were classified by providers under the Current Procedural Terminology (CPT) codes of individual psychotherapy (90806) or family psychotherapy (90847) (American Medical Association, 2006). Due to the few cases of somatoform disorder using family psychotherapy (n=13) analyses comparing family psychotherapy to individual psychotherapy were not conducted.

*Cost.* Treatment cost is calculated by multiplying the total number of treatment sessions per patient by the amount in dollars paid by CIGNA to the treatment provider per session. Total cost represents payments for sessions in the first EoC.

*Preliminary Analyses*

Preliminary analyses revealed that the sample size was too small to effectively use binary logistic regression to determine control variables. Instead, a chi square analysis was used in place of binary logistic regression for research questions 3, 4, and 5. Out of the 149 claims of

somatoform disorder as a primary diagnosis, 11 had an unknown provider type and were dropped from analyses for questions 3, 4, and 5.

Preliminary analyses also revealed that cost and session data was positively skewed and therefore breaks the assumptions for normality. To create a normal distribution a log transformation of the cost variable and session variable was also included in analyses. These log units create a log-normal distribution with the parameters being the expected mean of the distribution and standard deviation (Limpert, Stahel, & Abbt, 2001). Both the literal data and log normal data wielded the same statistical outcome.

## Results

The first research questions asked, "What are the number of sessions and cost in the first Episode of Care for somatoform disorder across all professions?" Descriptive statistics indicate that the mean cost of treatment for somatoform disorder across all sessions is $557.16 (*SD* = $1,113.93) with a minimum cost of $34, a maximum of $6,625. Log transformation of the data showed the mean cost of treatment for somatoform disorder to be 5.47 (*SD*=1.19). Total number of sessions for somatoform disorder psychotherapy across all professions ranged from 1 to 73 (*M* = 9.09, *SD* = 13.25). Log transformation indicates a session mean of 1.56 (*SD*=1.10).

The second research question asked, "What are the number of sessions and cost in the first Episode of Care by profession for Somatoform disorder?" Descriptive statistics indicate that the cost for professional counselors ranged from $40 to $4,276 (*M* = $726.50, *SD* = $1, 144.48). Log transformation indicated the cost for professional counselors ranged from 3.69 to 8.36 (*M*=5.7, *SD*=1.37). The number of sessions for professional counselors ranged from 1 to 70 sessions (*M* = 13.8, *SD* =19.36). Log transformation indicated a session mean of 1.89 (*SD*=1.23).

The cost for MDs ranged from $85 to $5,477.50 (*M*=1,310.10, *SD*= 2,340.59). Log transformation indicated a cost range of 4.44 to 8.61 (*M*=5.91, *SD*=1.72). Sessions for MDs treating somatoform ranged from a minimum of 1 session to a maximum of 59 sessions (*M*=14.8, *SD*= 24.88). Log transformation indicated a session mean of 1.55 (*SD*=1.69).

MSWs have a cost of treatment for somatoform disorder that ranged from a minimum of $34 to a maximum of $1,113.76 (*M*=$267.56, *SD*=$280.89). Log transformation indicated a cost range of 3.53 to7.02 (*M*=5.07, *SD*=1.04). Total sessions for MSWs who treated somatoform disorder ranged from a minimum of 1 session to a maximum of 35 sessions (*M*=6.47, *SD*=7.27). Log transformation indicated a session mean of 1.35 (*SD*=1.03).

MFTs cost of treatment ranged from a minimum of $34 a session to a maximum of $1267.20 (M=$473.94, SD= 720.90) for treatment of somatoform disorder. Log transformation indicated a cost range of 3.53 to 7.89 (*M*= 5.50, *SD*=1.17). Total session for MFTs who treated somatoform disorder ranged from a minimum of 1 session to a maximum of 31 sessions (*M*= 8.67, *SD*= 8.7). Log transformation indicated a session mean of 1.71 (*SD*=1.04).

Psychologists mean cost of treatment ranged from a minimum cost of $35 to a maximum of $2,310 (*M*=$365.75, *SD*= $399.11). Log transformation indicated a cost range of 3.56 to 7.75 (*M*=5.41, *SD*=0.99). Total sessions for psychologists treating somatoform disorder ranged from a minimum of 1 session to a maximum of 39 sessions (*M*=6.58, *SD*=7.06). Log transformation indicate a session mean of 1.44 (*SD*=0.95). Table 1 contains a summary of number of sessions and cost in the first Episode of Care by profession for somatoform disorder.

There were no reported cases of somatoform treated by nurses.

Table 1 About Here

The third question asked, "Is there a difference in total cost and cost per session of the first Episode of Care by profession for somatoform disorder?" Due to the different degree level providers being paid more than lower degree level providers (Master's, doctorate) an ANCOVA analyses was used to control for degree level. The ANCOVA revealed there is no significant difference in *total cost* by profession $F$ (5,137) = 1.57, p > .05. An ANCOVA did reveal that MD's had a significant difference in *cost per session* from all the other provider types $F$ (5,137) = 8.59, p < .05.

The fourth question asked, "Which profession has the lowest drop-out rate for somatoform disorder? Descriptive statistics indicate that counselors have the lowest drop-out rate with 6.67% followed by psychologists with a 15.28% drop-out rate. MFTs have a 16.67% followed by MSWs with a 20.59% drop-out rate. MDs had a 40% drop-out rate. A chi square analysis also revealed *no* statistically significant differences in drop-out rates across the six different license types $\chi^2$ (1, N = 149) = 4.047 p >.05.

The fifth research question asked, "Which profession has the lowest recidivism rate for somatoform disorder?" Descriptive statistics show MSWs to have the lowest recidivism rate by profession for somatoform disorder with a recidivism rate of 20.59 %. They are followed by psychologists with a recidivism rate of 22.22%. Counselors have a recidivism rate of 26.67%, followed by MDs with a 40% recidivism rate, and MFTs with the highest recidivism rate of 50%. With such a large range of recidivism rates, it may be expected that a statistically significant difference would be found. Yet, a chi square analysis revealed *no* statistically significant differences in recidivism rates across the six different license types $\chi^2$ (1, N = 149) = 5.567 p >.05. A power analysis, assuming a large effect size of .35, indicated a sufficient power of .93

for a sample size of 138. The data also meets the assumption of a chi square test with a frequency of 5 or more in each cell (MSWs n=34, psychologists n=72, counselors n=15, MDs n=5, MFT n =12).

The final research question asks, "Is there a difference in drop-out and recidivism rates for provider degree level (Master's, doctorate)?" A chi square analysis revealed *no* statistical significant differences between Master's level providers and doctorate level providers in drop-out $\chi^2$ (1, N = 149) = 0.091 p >.05, *or* recidivism rates $\chi^2$ (1, N = 149) = 0.66 p >.05. Table 2 contains a summary of drop-out and recidivism rates for the first Episode of Care by profession and provider degree level for somatoform disorder.

Table 2 About Here

## Discussion

Crane and Payne (in press) found that the highest recidivism rate was an average of 15.8% across all mental health disorders. Data from the present study found that the recidivism rates for somatoform across professions ranged from 20.95% to 50% which is high in comparison. This could indicate that psychotherapy for somatoform disorder is less effective than for other mental health diagnoses and somatoform patients are returning for more rounds of treatment. So the effect of psychotherapy may be less durable for this type of problem. The nature of somatoform disorder is such that symptoms are unexplainable and untestable. This may prove difficult for mental health providers to pinpoint a specific treatment. Because of the lack of origin or biological evidence as well as difficulty of treatment, many somatoform patients may experience feelings of skepticism from providers which may lead them to seek treatment from multiple providers across multiple disciplines.

Kroenke et al (1997) found that physicians report somatoform disorder as difficult to treat. The findings from this current study support this evidence that somatoform disorder is difficult to treat for psychotherapists as well. The total number of sessions for somatoform disorder ($M$=9.09, $SD$=13.25) across all professions was slightly higher than for other mental health disorders ($M$= 6.95, $SD$= 8.91), as reported in Crane and Payne (in press).

There is little research on the cost of treatment for somatoform disorder. Results indicate that there is no difference in total cost by profession. MDs had fewer sessions making no statistical difference in total cost, but analyses of cost per session did indicate that MDs, on average, charge more per session for treatment of somatoform disorder. But are the few sessions with MDs sufficient enough for a successful outcome? Hansen, Lambert, and Forman (2002) in their review of clinical trials and summary of literature found that literature suggests between 13 to 18 sessions is necessary for 50% of clients to improve. Unfortunately, no research has been done on the amount of session necessary for successful outcomes for somatoform disorder. Future research would be beneficial in determining what a "successful" amount of sessions may be for treatment of somatoform disorder to see the implications of MDs cost per session.

Analyses of the dropout rates by profession in the current study were consistent with the drop-out rates by profession with other mental health disorders. Hamilton et al. (in press) found the range of drop-out rates to be 19.08 % to 49.12% across all DSM-IV diagnoses. Results from the present study showed a similar range of drop-out rates by profession for somatoform disorder from 6.67 % (counselors) to 40 % (MDs). This could indicate that patients with somatoform disorder are not more likely to terminate from treatment prematurely as compared with other mental health diagnoses.

Research suggests that Master's level clinicians are paid less than doctoral level clinicians in the current mental health field (Finno et al. 2010). Results from the current study suggest that Master's level providers are as effective as doctoral level providers in treating somatoform disorder. If more patients with somatoform disorder receive successful treatment from Master's level providers, this could decrease the overall cost of treatment of somatoform disorder. It could be beneficial for insurance providers to have Master's level mental health providers for somatoform disorder because it would help reduce costs.

Evidence suggests that somatoform disorder is a prevalent disorder in the world's health care system (De Waal et al, 2004; Kroenke et al, 1997; Roca et al, 2009). Kroenke et al (1997) found that somatoform disorder affects 10 to 15% of primary care patients. Another study, showed a prevalence rate of 21.9%. The number of somatoform diagnoses in the data used for the current study does not support this evidence. With over 10 million entries, there are only 149 cases of somatoform disorder which is less than 1% of the mental health cases reimbursed by CIGNA Health Solutions. This could be due to somatoform disorder being under diagnosed. Those diagnosed with somatoform disorder may not be seeking psychotherapy treatment. Many clinicians may not be educated or trained in the symptoms of somatoform disorder or effective treatment options. The current study only looked at primary diagnoses. It is possible that several clients have somatoform disorder as a secondary or tertiary diagnosis. Finally, it may be that clients are seeking alternative clinical and diagnostic services that could pose a larger cost for health care providers. Future research should look at why the disorder is under diagnosed and/or what can be done to keep or bring more of the disorder into psychotherapy treatment.

*Limitations*

Limitations for this study included the small sample size (N=149). A future study would benefit from a larger sample size that would allow for binary logistic regression analyses to predict outcomes. With the possibility of somatoform disorder being under diagnosed, this may prove a difficult task. Given that the present larger data set included *all* psychotherapy services in the CIGNA network, across six years, it is unlikely that larger number of patient would be identified in normal health care utilization research. The research and clinical community could benefit from becoming more aware of somatoform disorder and its symptoms as well as learning about resources and clinicians who specialize in the treatment of the problem. Specialization clinics could team up with researchers to conduct research aimed at developing better treatment options for somatoform disorder.

The current study utilized a retrospective analysis of administrative data. Future studies would benefit from utilizing an experimental design. Such a design would allow for random assignment to each profession (professional counselor, MD, Master's nurse, MSW, MFT, psychologist). In the existing data, clients may not have had equal access to each provider type or they may have self selected in any number of ways.

This study measured treatment success using drop out and recidivism. It is possible that successful treatment could occur in one session. Based on the definitions of success used in this study, these cases would not be included as successful outcomes. Future studies would benefit by expanding the definition of success to include client and therapist self-report and clinical significance.

## Conclusion

Somatoform is a prevalent and expensive disorder. Research suggests it is difficult to treat and patients report high dissatisfaction with treatment. This study found that Master's level mental health providers are as effective as doctorate level mental health providers which could save insurance companies and the countries health care money each year. Contrary to research that suggests a high prevalence rate for somatoform disorder, the current study showed a low prevalence rate. This may suggest somatoform disorder is underdiagnosed or that clients are seeking alternative medical and diagnostic services that could potentially be more costly for clients and insurance providers. Continued research and awareness of somatoform disorder would be beneficial to clinicians and providers.

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**Table 1. Number of Sessions and Cost by Profession**

| | Counselor | MD | MFT | MSW | Psychologist |
|---|---|---|---|---|---|
| N Sessions | 15 | 5 | 12 | 34 | 72 |
| Mean Sessions | 13 | 14.8 | 8.67 | 6.47 | 6.58 |
| SD Sessions | 19.45 | 24.88 | 8.7 | 7.27 | 7.06 |
| Min Sessions | 1 | 1 | 1 | 1 | 1 |
| Max Sessions | 70 | 59 | 31 | 35 | 39 |
| LN Mean Session | 1.89 | 1.55 | 1.71 | 1.35 | 1.44 |
| LN SD Session | 1.23 | 1.69 | 1.04 | 1.03 | 0.95 |
| Mean Cost | $726.25 | $1,310.10 | $473.94 | $267.56 | $356.75 |
| SD Cost | $1,144.48 | $2,340.59 | $720.90 | $280.89 | $399.11 |
| Min Cost | $40.00 | $85.00 | $34.00 | $34.00 | $35.00 |
| Max Cost | $4,276.00 | $5,477.50 | $1,267.25 | $1,113.76 | $2,310.00 |
| LN Mean Cost | 5.7 | 5.91 | 5.5 | 5.07 | 5.41 |
| LN SD Cost | 1.37 | 1.72 | 1.17 | 1.04 | 0.99 |

**Table 2. Drop-Out and Recidivism by Profession and Degree Level**

| Provider Type | N | Drop-Out | Recidivism | Degree Level | N | Drop-Out | Recidivism |
|---|---|---|---|---|---|---|---|
| Counselor | 15 | 6.67% | 26.67% | Master's | 89 | 15% | 28.30% |
| MD | 5 | 40.00% | 40.00% | Doctorate | 60 | 16.90% | 22.50% |
| MFT | 34 | 16.67% | 50.00% | | | | |
| MSW | 12 | 20.59% | 20.59% | | | | |
| Psychologist | 72 | 15.28% | 22.22% | | | | |