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# The Relationship Between Physical Illness, Mental Illness and Chemical Dependency

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Abstract

There is a dearth of scholarship on the notion that chronic or severe physical illness can be the threshold issue in the development of mental illness and chemical dependency.  In a random sample of 300 participants in a hospital based mental health clinic, research was conducted to determine whether relationships exist among the three domains:  physical illness, mental illness, and chemical dependency.  Research found strong relationships among chronic illnesses, such as Hepatitis C, substance use disorders (SUDs), and various Axis I and Axis II mental health diagnoses.  Research further suggests that pain, whether due to a general medical condition, or to an accident or injury is related to opioid use disorders and Axis I mental health disorders. Finally, research suggests that stomach and intestinal issues have a strong relationship to alcohol use disorders and Axis I and Axis II mental health disorders.  The research suggests that counselors should pay close attention to Axis III medical conditions as developmental issues that may be related to the onset of mental illness and SUDs.

The Relationship Between Physical Illness, Mental Illness and Chemical Dependency

Significant research has been conducted into, what has been deemed by mental health service providers as, "co-occurring" or "dual diagnosis" of co-morbid mental health issues and substance use disorders (SUDs). In addition, significant research has been conducted by both the mental health scholarly community and the medical community into the relationship between both physical illness and mental health, and physical illness and SUDs. Little research has been conducted with respect to the relationship of physical illness, as the threshold issue for the development of mental illness and/or SUDs. While this study does not purport to answer the question of whether physical illness is such a threshold issue, it does suggest initial empirical evidence that links the three classes of disorders.

The mental health delivery system is dominated by mental health counselors, social workers, and psychologists, none of which are medical doctors. As such, when clients come in for mental health services, it is rare that medical diagnoses are discovered at the time of evaluation, unless the client is forthright in their medical history, or unless the mental health practitioner spends a significant amount of time discussing medical conditions. While most mental health evaluations include a brief medical history, rarely do clinicians discuss history and onset of physical illness as part of the overall mental health diagnostic impression. As such, mental health counselors and other mental health providers are unable to determine whether physical illness is the threshold issue that causes an individual to develop mental distress or SUDs. If mental health professionals had better insight into the originating factors that led to the development of mental illness and/or SUDs, it is possible that alternative treatment protocols would be beneficial.

The purpose of this research was to determine whether relationships exist between medical illnesses, mental health issues, and SUDs.  This research is significant because it may provide mental health practitioners with greater insight into the developmental reasons that individual clients develop mental health symptoms or SUDs.  This research is also significant because it may lead to the development of innovative treatment modalities that emphasize the specific threshold that has led to the development of mental illness and SUDs.  Absent a clear understanding of the client's physical illness, including type of illness, severity of illness, effect of illness on quality of life, and date of onset of illness, mental health practitioners are basing diagnostic impressions on only one part of the individual.  Obtaining additional information about physical illnesses would allow the mental health community to treat clients more holistically, and may allow mental health counselors to free themselves of some of the rigidity found in the DSM-IV.  Physical illness and its effects on quality of life may presuppose mental health diagnostic criteria, freeing the mental health professional to pursue different diagnostic and treatment regimen.

The research question giving rise to this study is:  What is the prevalence of mental health diagnoses, substance use disorders and physical illness?  The method involved in this study was a retrospective medical record review of 300 current clients with an active Axis I or Axis II mental health diagnosis at a hospital-based mental health clinic in suburban Western New York. The researcher reviewed each file, coding the mental health diagnosis, initially excluding SUDs alone.  The researcher then reviewed each file for SUDs, coding separately for each substance. Finally, the researcher reviewed the files, looking for evidence of an Axis III medical diagnosis, coding for specific chronic or severe illnesses.  Limitations to this study included the inability of the researcher to determine the date of onset of physical illnesses, the effects the physical illness

had on participant quality of life, and the current status of remission of either physical illness or SUDs because the researcher relied solely on medical records and had no direct contact with the participants.

The researcher's frame of reference is based upon the notion that most mental health issues and SUDs are born out of a developmental issue that occurred during an individual's lifespan. While there are many developmental issues that may trigger mental health issues or SUDs, the researcher in this study was particularly interested in physical illness as the threshold issue. As such, the researcher assumed that the sudden onset of a physical illness may play a significant role in the development of mental health issues and SUDs.

While this study in no way proves that physical illness is a threshold issue to the development of mental illness and/or SUDs, it does provide initial empirical evidence suggesting that significant relationships exist among all three domains. Additional research may provide empirical evidence supporting the notion that physical illness is the threshold issue for some individuals; however, the limitations in the present study preclude such a conclusion.

**Review of the Literature**

Individuals with mental health disorders and chemical dependency have long been labeled as having a "dual diagnosis" or a "co-occurring disorder" (Council on Accreditation of Counseling and Related Professions [CACREP], 2009; Xie, Drake, McHugo, Xie, & Mohandas, 2010).  Rarely have researchers or practitioners opined that severe or chronic physical illness impacts the onset of such "dual" or "co" diagnoses.  The onset of chronic or severe illness can occur at any time during one's developmental lifespan, and may effect have a significant impact on one's developmental process.  There is a significant body of research suggesting a relationship between mood and personality disorders with substance use disorders, and substantial literature suggesting a connection between severe or chronic physical illness with emotional disorders.  There is also significant literature on co-occurring physical disorders and chemical dependency.  Counselors should be aware of the potential interaction among physical, emotional, and chemical disorders because of the interrelation that one disorder has on the others.  Physical illness has the potential to give rise to both mental health disorders and chemical dependency disorders.  While counselors are not physicians, it is imperative that counselors be informed on clients' physical illnesses at the onset of the counseling relationship so that counselors can execute best practices for treatment.   There is a significant gap in the literature as it relates to chronic or severe physical illness as the threshold incident leading to the onset of both severe mental illness and chemical dependency.

**Co-occurring Mental Health Disorders and Substance Use Disorders**

The most common use of the terms "co-occurring disorders," and "dual diagnosis" relates to the combination of mental health disorders and substance use disorders.  Such co-occurring

disorders seem to appear most often in mood disorders, followed by personality disorders, and then thought disorders.

**Mood disorders and substance use disorders.** Mood disorders such as Major Depressive Disorder (MDD) and Substance Use Disorders (SUD) are perhaps the most researched and reported of all co-occurring disorders, leading to perhaps the most heterogeneous results.  Conner, Pinquart, and Duberstein (2008) highlighted 55 studies in their meta-analysis indicating that depression is associated with substance use.   Various commonly used instruments in measuring depression were compared for validity and reliability in determining a correlation between SUDs and MDD.  Results indicated that 55% of participants involved in the studies had above average levels of depressive symptoms (Conner, 2008).   There were somewhat consistent findings of 39% comorbid SUDs and MDD in a study of 2,541 patients enrolled in a study to determine the efficacy of the Sequenced Treatment Alternatives to Relieve Depression (STAR*D; Davis et al. 2005).  The goal of STAR*D, which is a multivariate treatment protocol for depression, is to determine the best treatment alternatives for people who did not respond well to traditional medications, such as SSRIs (Davis et al., 2005).

Participants in the Davis et al. (2005) study ranged in age from 18-75 years and had been diagnosed with non-psychotic MDD.  Those with additional diagnoses of schizoaffective disorder, schizophrenia, bipolar disorder, anorexia nervosa, bulimia, and obsessive-compulsive disorder were screened out of the study due to the necessity of different treatment regimens.  Of the 2,541 participants, more than 41% of all participants had co-occurring MDD and SUD; specifically, 23.6% reported symptoms of concurrent MDD and alcohol use disorder, 11.2% had MDD and an illicit drug use disorder, and 5.3% had MDD and both alcohol use and drug use disorders.

Dyer and Cruickshank (2005) found that 35% of the 368 methamphetamine users they surveyed met the diagnostic criteria for MDD.  Within that same study, the researchers divided the participants into groups, a poly-substance group and an individual substance group. Participants, who used both methamphetamine and heroin, had higher mean Beck Depression Indices (Beck, Steer & Brown, 1997) than those who used *only* heroin *or* methamphetamine (Dyer & Cruickshank, 2005).  The results suggested that people with poly-substance disorders have higher rates of depression than those with individual SUDs, which is in contrast to Davis *et al.*'s (2005) findings of a significantly lower rate of depression in poly-substance users.

In one study, the rate of co-occurring MDD and SUDs for adolescents was consistent with adult populations (Subramaniam, Lewis, Stitzer, & Fishman, 2002).  Fifty-six adolescents in a residential chemical dependency treatment program reported using multiple substances at least three times per week in the six months prior to treatment admission. The most common substances included marijuana (86%), alcohol (69%), cocaine (25%), and opiates (11%).  Gender was a clinically significant factor among adolescents with depression, with females displaying significantly higher levels than males. Subramaniam et al.'s findings were in contrast to the Davis et al. (2005) study, wherein females were less likely to present with depressive symptoms. Davis et al. found that 39.6% of males and 23.2% of females with SUDs presented with depressive symptoms (Davis et al. 2005).

There are several additional indicators of increased levels of depressive symptoms associated with substance abuse.  Research found that individuals who shared needles in intravenous drug use had higher levels of depressive symptoms (Conner, 2008).  Additionally, those who reported previous suicide attempts had higher levels of concurrent depressive symptoms and substance abuse (Davis et al. 2006).

*Distinguishing between primary and secondary disorders*. There is a significant body of research alone on the effects of depression on addiction relapse and vice versa. As noted by Curran, Booth, Kirchner, & Deneke (2007), much of the research devoted to treatment outcomes does not distinguish whether the symptoms of depression are primary MDD, or substance induced MDD. Few data aimed at determining the source of one's depression have been collected. The literature that is available leads to differing opinions as to the nature of co-occurring depression and substance use.

As with any co-occurring mental health and substance use disorders, researchers disagree on the order of disease onset, progression and treatment (Nunes & Rounsaville, 2006). One of the predominant issues in making this determination is the terminology afforded by the DSM-IV. Nunes and Rounsaville (2006) suggested that the inclusion of primary disorders and substance induced disorders create significant confusion for the practitioner because those disorders that are categorized as substance induced should '"exceed the usual effects"' of substances, implying something more (p. 91). Even the writers of the DSM-IV hypothesized that a "substance induced" mood disorder is not merely a condition created by the substance, but rather a mood disorder that is either triggered or exacerbated by substance use. In contrast, one research group has interpreted the DSM-IV as considering a mood disorder as "primary" and not "substance induced" if the symptoms predate the individual's substance use, exceed that of the substance alone, or continue for at least four weeks beyond acute substance (Niciu et al. 2009).

Niciu et al. (2009) compared four groups of participants labeled as substance users: those with no history of Major Depressive Episode (MDE), those with an independent diagnosis of MDE, those diagnosed with substance induced MDE only, and those diagnosed with both independent and substance induced MDE. Of the 1929 participants in the study, 168 reported

MDE that was both "independent" and "substance induced." Of these participants, 45.4% ($n =$

74) reported their first MDE as "substance induced," while 50.9% ($n = 83$) reported their first

episode of MDE independent of substance use, and 3.7% ($n = 6$) reported the onset of MDE

concurrent with their substance use (Niciu et al. 2009).  The research team used a more stringent

definition of MDE than that used in the DSM-IV, requiring that participants meet the full criteria

for MDE and not the more generalized criteria for substance induced MDE.  Those participants

who identified as having both independent and substance induced MDE "fared much worse on a

variety of psychopathological measures," which suggested that the distinction between primary

MDE and substance induced MDE is "inadequate to characterize depressive episodes among

substance-dependent individuals (Niciu et al. 2009, p. 1706)."

*Treatment interventions for mood and substance use disorders*. Perhaps the most

significant notion of co-occurring MDD and SUD involves the likelihood for substance relapse

after partial or total substance-use remission.  Curran et al. (2007) found moderate to severe

symptoms of depression at the time of discharge from a substance abuse detoxification center to

be a valid predictor of substance relapse within three months.   Of the 126 consecutive

admission participants studied, 70% of those who scored high on the Beck Depression Inventory

(Beck, Steer, & Brown, 1996) at the time of release relapsed within the three month period. The

researchers found, however, that only 40%, of those participants who left the clinic with a

prescription for antidepressant medication, relapsed in the same period. The researchers

concluded that medication management of depressive symptoms helped to reduce relapse rates.

Non-pharmaceutical based treatment has yielded similar or even more impressive results.

Researchers used Mindfulness Based Relapse Prevention (MBRT) to prevent relapse,

through reducing depressive symptoms and craving, with a sample of 168 participants who were

enrolled in outpatient substance abuse treatment (Witkiewitz & Bowen, 2010). The researchers

used the Beck Depression Inventory and the Penn Alcohol Craving Scale (Flannery, Volpicelli &

Pettani, 1999).  The use of MBRT mediated depressive symptoms in nearly 73% of the

participants, which predicted longer treatment adherence and better treatment outcomes

(Witkiewitz & Bowen, 2010).

*Treatment retention variables.* Treatment retention for those diagnosed with both MDD

and SUD are impacted by several variables.  Two of the more noteworthy variables suggesting

lower treatment adherence are age and racial minority (Tate et al. 2011).  In a study of 253

participants, recruited from the Department of Veterans Affairs in San Diego, researchers found

"immutable predisposing characteristics (specifically age and race)" that were related to lower

treatment attendance and higher treatment dropout (Tate et al. 2011 at p. 362).  Researchers had

various theories as to why there were disproportionately high dropout rates among these groups.

Despite the varying theories, researchers agreed that new options such as computer-based

interventions be used for younger participants, and individually delivered treatment interventions

for minority groups (Tate et al. 2011).

**Personality disorders and substance use disorders.** Evidence-based research found a

strong correlation between co-occurring diagnoses of personality disorders and substance use

disorders.  Personality disorders are defined as "patterns of maladaptive responses related to

one's perceptions, cognitions, emotional range/reactivity, or impulse control" (Taylor, 2005, p.

516). It should be noted that research on personality disorders, particularly those classified as

"Cluster C" personality disorders are difficult to  interpret due to the symptom similarity to Axis

I diagnoses of depression and anxiety (Bowden-Jones  et al., 2004).  Moreover, evidence

suggests that individuals with "Cluster B" personality disorders, particularly Anti-social

Personality Disorder (ASPD) and Borderline Personality Disorder (BPD) are at significantly

higher risk for substance use disorders due to some of the characteristics of personality disorder,

such as impaired decision-making processes, anti-social behavior, and difficulties in forming

meaningful relationships (Bowden-Jones et al., 2004; Taylor, 2005; Westermeyer & Thuras,

2005).

Bowden-Jones et al., (2004) studied 278 individuals admitted for substance abuse

treatment.  Of these participants, 113 were also diagnosed with a personality disorder based on

personality subtype and cluster.  The purpose of the study was to determine the prevalence and

type of personality disorder co-occurring with SUDs (Bowden-Jones et al., 2004).  The

participants were generally categorized by substance used:  those with alcohol use disorders, and

those with drug use disorders.  Initial findings showed that 37% of those with drug use disorders

had a co-occurring personality disorder, with by far the highest prevalence in "Cluster B"

disorders such as anti-social and borderline personality disorders (Bowden-Jones, 2004).   Those

with alcohol disorders were also more likely to have "Cluster B" disorders, but were also found

to have a significant number of "Cluster C" disorders, including Obsessive-compulsive Disorder

(OCD) and Dependent Personality Disorder (DPD).

*ASPD and substance use disorders*. Taylor (2005) opined that persons with "Cluster B"

personality disorders and persons with SUDs share some similar personality characteristics.

Specifically, both groups tend to have deficits in certain cognitive functioning, such as impaired

judgment, poor planning, and impulsivity.  She further suggested that such deficits may have led

to excessive drug and alcohol use, despite negative consequences (Taylor, 2005).  Westermeyer

and Thuras (2005) found similar deficits in a sample consisting of individuals with SUDs and

ASPD, revealing that participants with co-occurring SUD and ASPD engage in more use of illicit drugs.

A study consisted of 123 college students who were administered several inventories to evaluate cognitive functioning (Taylor, 2005). Participants were also screened for Axis I SUDs using the Structured Clinical Interview for DSM-IV (First, Spitzer, Gibbon, & Williams, 2001), and for Axis II personality disorders using the Structured Interview for DSM-IV Personality Disorders (Pfohl, Blum, & Zimmerman, 1995). Only those participants who screened positive for both SUD and Cluster B personality disorders were included in the study (Taylor, 2005). Of the participants, 18.2% were diagnosed with ASPD; this group had a significant correlation to drug use beyond cannabis and/or alcohol, suggesting that persons with ASPD progress in their substance use to drugs such as cocaine, heroin, and methamphetamines.

A study (Westermeyer & Thuras, 2005) of 606 participants with SUDs, 54 of which were also diagnosed with ASPD, found that persons with ASPD averaged 6.2 more symptoms of SUD than those without ASPD. Participants were categorized as having ASPD if they met the DSM-IV criteria for ASPD. Participants were then administered the Interviewer-Rated Minnesota Substance Abuse Problem Scale (Westermeyer, Nugent, & Crosby, 1998) to determine degree of and associated problems with substance abuse. Significantly, in both the Taylor (2005) and the Westermeyer & Thuras (2005) studies, participants with ASPD identified interpersonal conflict management, negative life situations, family discord, and legal problems as significant triggers to substance use.

***BPD and substance use disorders.*** Significant correlations between SUDs and BPD have been found (Bowden-Jones *et* al., 2004; Taylor, 2005; Westermeyer & Thuras, 2005). The prevalence of BPD in the general population is approximately 2% (APA, 2000). In the drug

using population, rates of BPD vary from 11% to 65% (Darke et al., 2007).  Symptoms

associated with BPD include feelings of emptiness, impulse and anger control, and intense and

frequent mood changes (APA, 2000; Darke et al., 2007).

In a 36-month study, 29 heroin users were evaluated for drug treatment history, overdose

history, and suicide history.  They were also screened for drug use history, including needle

sharing, health related problems, and criminal behavior.  Among those diagnosed with BPD ($n =$

186), only 8.2% of the cohort achieved sustained heroin abstinence over the 36-month period,

which represents "a persistently elevated risk…compared to other heroin users" (Darke et al.,

2007 p. 1144).  Those with BPD also continued to show higher levels of risky behavior after they

stopped using heroin.  Continued legal problems, health-related issues, and treatment adherence

remained considerably higher with those participants dually diagnosed with BPD and SUD

(Darke et al., 2007).

Zanarini et al. (2010) found both similar and contrasting results to previous findings

associated with co-morbid BPD and SUD.  In a ten year follow-up study of 290 participants,

researchers found that persons diagnosed with BPD were two times more likely to have a

substance use disorder than an alcohol use disorder, which substantiates earlier data from

Bowden-Jones *et* al. (2005).  Furthermore, several researchers (Bowden-Jones et al., 2004;

Taylor, 2005; Westermeyer & Thuras, 2005) found that SUDs were "significantly more common

among borderline patients than among [other] Axis II comparison participants (Zanarini et al.

(2010).  Overall, participants with BPD were 65% more likely to have substance-related

disorders, while 52% were more likely to have alcohol-related disorders (Zanarini et al., 2010).

***Treatment of personality disorders and SUDs.*** One area studied by Zanarini et al.

(2010), which was not considered by previous studies, involved rates of relapse in the co-

occurring BPD/SUD population.  Among the participants, 40% of BPD participants with alcohol dependence, who relapsed, ultimately experienced another period of alcohol dependence. Similarly, 35% of BPD participants with drug dependence, who relapsed, ultimately experienced another period of drug dependence (Zanarini et al., 2010).

Considering the high rates of co-occurring "Cluster B" personality disorders and SUD, it is important to consider some of the reasons behind increased substance use.  As described above, some of the characteristics of "Cluster B" personality disorders include interpersonal conflict management, negative life situations, family discord, and legal problems as significant triggers to substance use (APA, 2000).  Smyth and Wiechelt (2010) confirmed some of these findings and identified additional triggers common to persons with "Cluster B" personality Disorders.

In a study of 50 participants in an inpatient substance abuse treatment facility, researchers divided the cohort into those presenting with a personality disorder and those who did not. Researchers determined that 62% of the participants met the criteria for at least one personality disorder (Smyth & Wiechelt, 2010).  Researchers discovered several significant findings. Initially, those with personality disorders had significantly higher drug screening scores, suggesting higher levels of dependence.  Moreover, analysis of the research suggested that those with personality disorders were more likely to use drugs when experiencing "unpleasant emotions, physical discomfort, and conflict with others" (p. 69).  Their findings supported previous findings (Taylor, 2005; Westermeyer & Thuras, 2005) that conflict management was a common trait among those with co-morbid SUDs and "Cluster B" personality disorders. Furthermore, Smith and Wiechelt (2010) suggested that those with personality disorders have

lower self-efficacy for remaining abstinent under pressure from others, indicating a higher

likelihood for substance relapse.

Finally, most researchers agreed that specific modes of follow-up are a necessary element

to treatment of co-occurring SUD and personality disorder (Jansson, Hesse, & Fridell, 2008;

Smyth & Wiechelt, 2010; Zanarini *et* al., 2010).  Both Smyth and Wiechert (2010) and Zannarini

*et* al. (2010) suggested that Dialectical Behavioral Therapy (Linehan *et* al., 1999) is a more

promising treatment modality for people with personality disorders than the combination of

traditional 12-step self-help groups and supportive counseling.  Others believe that the

personality disorder itself should be the focus of treatment, which, they opine, would improve

SUD treatment retention, leading to better overall treatment success (Jansson, 2008).

**Substance use disorders and "severe mental illness."** The literature on other co-

occurring chemical dependency and mental illness seems to lump several disorders into the

category of severe mental illness (SMI; Mueser  et al., 2009; Pourmand, Kavanaugh, &

Vaughan, 2004; Xie  et al. 2010).  Severe mental illness covers the Schizophrenia spectrum,

Bipolar Disorder and Psychosis.  Persons with co-occurring SUDs and SMI often face

homelessness, episodes of violence, incarceration, and repeated hospitalization (Xie *et* al., 2010).

In a study of 116 participants diagnosed with co-occurring SUDs and SMI, nearly 86% of the

population had achieved at least one period of 6 month abstinence from alcohol, and 35% of

those who had achieved 6 month remission remained abstinent at the ten year follow up (Xie  et

al., 2010).  Those who did not achieve short or long term abstinence were more likely to have

had alcohol dependence rather than alcohol abuse at baseline.  Some of the features that preceded

abstinence include stabilization of psychiatric symptoms, participation in substance abuse

treatment programs, competitive employment, and general life satisfaction.  Conversely, those

who were less likely to achieve long-term abstinence, had spent additional time in jail or psychiatric hospital, and had limited social contact with non-abusers (Xie et al., 2010).

*Treatment of SMI and SUDs*. Dual diagnosis of SMI and SUD can have drastic effects on family relationships (Mueser et al., 2009). Despite the prevalence of family programs within both chemical dependency treatment and severe mental illness treatment, there are few family programs that address the co-occurring nature of these illnesses. In studying 108 clients with both severe mental illness (again, defined as schizophrenia, schizoaffective disorder, and bipolar disorder) and chemical dependency, Mueser et al. (2008) found that family intervention can be effective in both psychiatric symptom stabilization and in reducing the risk of substance relapse. The study compared two models of family intervention: a psychoeducational model and a pilot program called Family Intervention for Dual Diagnosis (FIDD). The primary unique features of FIDD include longer family engagement, the addition of family communication skills training, family problem solving, and family enhancement of the client's motivation to remain abstinent (Mueser *et* al., 2008). Significantly, regardless of the length of the program, those who chose to dropout of family intervention did so within the first six weeks, indicating that family members who are engaged in client progress will provide additional time and effort into helping the client enter a phase of recovery. Both the psychoeducational groups and FIDD correlated to better treatment outcomes due to fewer family conflicts and higher levels of family support (Mueser et al., 2010).

A similar study challenges the value of family involvement in recovery from co-occurring SMI and SUD. In a study of 58 participants with schizophrenia-related DSM-IV diagnoses and SUD, the researchers studied family involvement with the participants through structured interviews (Pourmund, 2008). Due to the severity of the participants' mental illnesses,

many of them lived with family members, such as parents and siblings.   Research indicated that

the presence of expressed emotion, defined as "attitudes and behavior that is likely to induce

emotional distress" was the most powerful predictor of substance relapse among the cohort (p.

473).  Since many of the participants lived with family members, the researchers were able to

gather information relating to over-communication and negative feedback provided by family

members, which correlated to substance relapse.

There is ample literature connecting mental health issues with chemical dependency,

something that counselors are readily familiar with.  A similar body of literature exists

connecting severe physical health problems, such as HIV and various cancers with mental health

issues.

**Co-occurring Severe Physical Illness and Mental Health Disorders**

The two most prevalent areas of current research on co-occurring physical illness and

mental illness relate to HIV/AIDS and various forms of cancer.  This literature review focuses on

these two severe physical illnesses and is in no way a complete representation of manifestations

of physical illness and mental health related issues.

**HIV and mental health issues.** There are currently 40 million people world-wide and

1.2 million American's living with HIV/AIDS (Centers for Disease Control and Prevention,

2010).  Since the advent of Highly Active Antiretroviral Therapy (HAART) for HIV/AIDS, the

mortality rate of those living with the virus has dramatically reduced (Ferrando & Freyberg,

2008).   Instead, HIV has become a chronic, manageable disease, using a regimen of medications

requiring strict adherence (Reiter, 2000).  Despite the advances in HIV treatment, rates of co-

occurring mental health issues, specifically MDD and Post-Traumatic Stress Disorder (PTSD)

remain highly prevalent in those HIV positive people being treated with HAART (Eller *et* al.,

2010; Ferrando & Freyberg, 2008; Vranceau *et* al., 2008).  In fact, lifetime rates of current MDD

in HIV patients is at least twice than that in the general population (Rabkin, Ferrando,

Jacobsberg, & Fishman, 1997).  Bing et al. (2001) found that over 30% of a nationally

represented sample of HIV+ individuals met the DSM-IV criteria for either MDD or Dysthymic

Disorder.

Worldwide, the rates of co-morbid HIV disease and depression are even higher.  In a

study of 1,217 HIV+ individuals in five countries, researchers found that co-occurring rates of

HIV infection and depression ranged from 35% in Taiwan to 66% in Norway, with an overall

average of 54% of respondents reporting depressive symptoms (Eller *et* al. 2010).  Considering

the ten year differential between the Bing  et al. (2001) and the Eller  et al. (2010) studies, it

would appear that rates of depression among HIV+ individuals is rising instead of falling, despite

overall improvements in HIV treatment.  One possible reason for the increase in depression

among HIV+ individuals is the recent attempt to include more women in the study.  Eller et al.

(2010) found that HIV+ women were significantly more likely to report symptoms of depression

then men, something not accounted for in the Bing *et* al. (2001) study.  Other reasons for

increases in depression include medication side-effects, social alienation, and self-perception of

living with HIV for a prolonged period of time (Eller et al., 2010)

In addition, income differentiation, poor social support, illness representation, and lower

medication adherence rates were predictors of increased levels of depression across the study

(Eller et al., 2010).  Additionally, increased depression correlates with advances in the stage of

HIV illness (Ferrando & Freyberg, 2008).  Lyketsos et al. (1996) found that depressive

symptoms increased by 45% in those individuals who developed AIDS-related symptoms versus

those who remained stable in treatment. Similarly, Rabkin et al. (1997) found significantly

higher rates of Dysthymic Disorder in HIV+ patients having a CD4 count less than 500.  Both of these studies suggest that both physical symptoms and poor social support were associated with higher levels of depressive symptoms (Lyketsos et al., 1996; Rabkin et al., 1997).

One of the most significant problems associated with higher levels of depression among the HIV+ population is the correlation between depression and low medication compliance (Ammassari et al., 2004).  HAART medications are only effective when adherence levels are near perfect (Reiter, 2000).   HIV+ patients diagnosed with depression have been found to have less than optimal treatment adherence rates (Vranceanu et al., 2008).  Vranceanu et al. (2008) studied treatment adherence of 282 persons with HIV disease.  Of the 282, 160 were also diagnosed with either depression and/or PTSD per the criteria listed in the DSM-IV. In order to substantiate medication adherence, the research team used MEMS Smart Caps, which contain a microprocessor that records the date a medication bottle is opened and closed.   For purposes of the study a medication dose was considered correct if the MEMS Smart Caps noted that medication had been removed within a three hour timespan of the suggested dose time (Vranceanu *et* al., 2008).  In the study, medication adherence was the dependent variable, while PTSD and depression were independent variables.  Participants who screened positive for depression were "significantly associated" with poor treatment adherence (Vranceanu *et* al. p. 318).  Surprisingly, however, those who screened positive for PTSD or a combination of PTSD and depression were only marginally associated with diminished treatment adherence.

***Treating depression and HIV.*** The literature indicates that depression treatment modalities are effective in managing depressive symptoms in some individuals (Ferrando & Freyberg, 2008; Ellers et al., 2010).  Psychotropic medications, including fluoxetine, imipramine, and other SSRI's and SNRI's have been helpful in symptom relief in up to 74% of those studied

(Rabkin, Wagner, & Rabkin, 1999).  Caution must be used in prescribing such drugs, however;

because SSRI's and HAART drugs use "similar metabolic pathways" which may "inhibit

metabolism of the SSRI" (Fernando & Freyberg, 2008).  Self-management of depressive

symptoms has also been found effective (Eller et al. 2010).  Among the most effective strategies

for managing depressive symptoms without medication are prayer and meditation, physical

activity, spending time with family and friends, and attending support groups (Eller et al., 2010).

Unfortunately, there have been few studies that look solely at psychotherapy as a treatment

modality for co-occurring HIV and depression.  The literature reveals that studies that consider

individual and group psychotherapy also include psychotropic medication as a variable

(Ferrando & Freyberg, 2008).

     **Cancer and mental health issues**. It was estimated that in 2008, there were nearly 12.7

million newly diagnosed cancer cases and nearly 7.6 million cancer-related deaths worldwide

(Ferlay, Bray, Mathers, & Parkin, 2008).  Among cancer patients, it was estimated that

occurrences of anxiety and depression was nearly twice as high then in the general population

(Hintz et al., 2010).  MDD was the most commonly diagnosed mental health issue reported by

cancer patients (Kleiber et al., 2010).  Other common mental health disorders found in the cancer

population include Generalized Anxiety Disorder (GAD), PTSD, and Social Anxiety Disorder

(SAD) (Mehnert, Lehmann, Graefen, Huland, & Roch, 2009).  Mental health disorders are more

likely to occur with specific more severe types of cancer such as hematologic cancer, lung

cancer, pancreatic cancer, and breast cancer (Fox & Lyon, 2006; Mayr & Schmid, 2010; Priscilla

et al., 2011).  Research indicated that co-occurring mental health disorders and cancer had

serious implications on health-related quality of life and on mortality rates (Fox & Lyon, 2006;

Menhert *et* al., 2009).

Hematologic cancers, such as leukemia, lymphoma (Hodgkin's and non-Hodgkin's), and myeloma represent the types of cancers in which mental health issues were most like to co-occur (Priscilla et al., 2011).  In a study of 105 patients with hematologic cancer, 74% of the patients reported some form of mental health issue, with MDD and SAD being the most prevalent (Priscilla et al. 2011).  Significantly, mental health diagnoses affected health-related quality of life across many different spectrums (Fox & Lyon, 2006; Kleiber *et* al., 2009; Priscilla *et* al., 2011).

*Cancer and quality of life*. Priscilla et al. (2011) found negative correlations between MDD in cancer patients and five functioning aspects of quality of life, including emotional, physical, role, cognitive, and social functioning.  Additionally, physical symptoms such as fatigue, sleep disturbance, appetite loss, financial difficulties, and nausea were also correlated positively with those cancer patients dually diagnosed with MDD (Priscilla et al.  2011). Similar results were reported in patients with lung cancer (Fox & Lyon, 2006).  In a study of 51 patients with lung cancer, researchers observed an astounding 98% co-occurrence of MDD, which again had positive correlation to a decrease in health-related quality of life (Fox & Lyon, 2006).  Some of the contributing factors observed included severity of symptoms, fatigue, and to a lesser degree, pain, all of which impacted quality of life and suggests that symptoms of MDD remain with lung cancer patients long into survivorship (Fox & Lyon, 2006).

In order to determine the effects of cancer on health-related quality of life, 98 patients with a variety of cancers who met the DSM-IV criteria for MDD were studied (Kleiber *et* al., 2010).   The qualitative study involved in-depth interviews with participants to better understand the problems faced by cancer survivors.  The results substantiated earlier claims that co-occurring cancer and MDD had a negative impact on health-related quality of life.  Of the

respondents, 54% reported concerns about cancer relapse and 29% reported concerns about their

cancer treatment.  As for physical symptoms, 33% reported fatigue, 25% reported sleep

disturbances, and 21% reported a diminished ability to concentrate.  More than 30% reported

limitations in functioning, including participating in activities which they used to enjoy.

Psychologically, 56% reported loss of interest and 55% reported low mood, two of the key

elements of MDD.  Included in the key elements were the inability to enjoy things and a lack of

interest in doing things they used to enjoy.  Patients described their mood as "'everything feels

bleak,' and 'there is a dark cloud hanging over me' (p.65)."  A significant number of respondents

(61%) also reported difficulties in their interpersonal relationships, including social isolation,

withdrawal, and marital discord. Furthermore, they found that 65% of the respondents reported

that they were as concerned for others' well-being as they were for themselves.  Their concerns

involved primarily the effects of their disease on those closest to them, such as spouses and

children.  Respondents questioned whether their family members "'could deal with their illness'"

and whether their families would be "happy and successful in the future," or "if they would be

able to manage financially" (p.66). Patients with hematologic cancer also expressed financial

concerns as being anxiety producing (Priscilla et al., 2011).  Financial concerns related to the

family were the predominate factor in cancer patients with SAD.

     *Mental health assessment instruments and cancer*. Some theorists claim that depression

and anxiety should not be used as outcomes related to quality of life in cancer patients (McCabe

& Cronin, 2010).  They claim that issues of validity and reliability of instruments, such as the

Beck Depression Inventory (Beck, Steer, & Brown, 1996) and the Hospital Anxiety Depression

Scale (Zigmond & Snaith, 1983) were not developed to assess outcomes in quality of care

(McCabe & Cronin, 2010).  Conversely, Mayr and Schmidt (2010) found both the Beck

Depression Inventory and the Hospital and Anxiety Depression Scale to be both valid and

reliable in assessing cancer patients for mental health issues and for helping to determine overall

health-related quality of life. As with other co-occurring disorders, however, practitioners and

theorists disagree as to the cause/effect relationship between cancer and mental health issues.

Some claim that the effects of cancer treatment alone suffices to produce symptoms that are

similar in nature to mental health issues, but are not, in and of themselves, mental health

*diagnoses* (Mayr & Schmid, 2010; McCabe & Cronin, 2010). McCabe and Cronin (2010)

opined that social support following cancer treatment is the most suitable way to assess the

potential onset of mental health *symptoms,* and that the quality of such support will often impact

the patient's perception of their quality of life. While Mayr and Schmid (2010) agreed that

mental health diagnoses should not be associated with cancer patients, they did support the use of

antidepressant therapy as a means of easing symptomology.

**Co-occurring Severe Physical Illness and Substance Use Disorders**

Severe physical illnesses, such as HIV/AIDS, Hepatitis C (HCV), and cancers have high

rates of co-occurring SUDs. There is significant evidence linking intravenous drug and

HIV/HCV, while individuals diagnosed with cancer have increased alcohol use and continued

nicotine use, despite negative consequences. Some evidence suggests that the development of a

severe physical illness can be the catalyst to the development of an SUD, while other evidence

suggests that such illnesses ultimately become factors influencing those with ongoing SUDs to

stop using drugs.

**HIV/ Hepatitis C and substance use disorders.** HIV and Hepatitis C Virus (HCV)

share many common attributes. Both are blood born, chronic, immune-suppressing viruses and

share certain specific transmission methods, including needle sharing. HIV can be transmitted

sexually, while HCV cannot (Centers for Disease Control and Prevention, 2010). While they are

not mutually exclusive, they share some common traits and should be considered together as

they relate to SUDs.  The health issues related to HIV include the development of opportunistic

infections, such as pneumocystis, toxoplasmosis, and encephalitis, which, if left untreated, will

likely, lead to death.  Similarly, HCV attacks the liver, causing cirrhosis and liver failure, which

can also lead to death if left untreated.

The literature on co-occurring HIV and SUDs suggests that a combination of social

customs, mores, religious views, and legislation have impeded efforts to curtail the HIV

pandemic (Adrian, 2006).  In addition, the interplay between sex and drug use has created a

continuous, reciprocal cause/effect relationship between SUDs and the spread of HIV.  Thus, it is

both common for people who become infected with HIV to self-medicate with addictive drugs,

and equally common for those with addiction disorders to become infected with HIV (Adrian,

2006).  The same reciprocal relationship exists with co-occurring HCV and chemical

dependency (Treloar & Rhodes, 2009).  As of 2009, it was estimated that between 30% and 60%

of injection drug users were infected with HCV, which was commonly attributed to the

continued practice of sharing needles (Treloar & Rhodes, 2009).

Despite the similarities, in co-occurring chemical dependency in HIV and HCV patients,

the issues are by no means identical.  Since the primary transmission method of HCV is through

the sharing of needles, HCV presents its own unique set of circumstances. Two key stressors in

persons with HCV are social stigma and the perceived illness experience (Treloar, 2009).  The

Treloar study was a qualitative synthesis of 25 English-language, peer reviewed, qualitative

empirical studies, which focused on the "lived experience" of HCV among injection drug users.

Social stigma among HCV patients leads to the belief that one has a "spoiled identity," which is

"characterized by a sense of contamination" or lost opportunity (Treloar, 2009, p. 1324-1325).

Such identity disruption can lead to depression, despair, and disorientation, all of which can

decrease the user's quality of life (Matoo, 2008).

Lower health related quality life leads to both physical health issues, as well as an

increased likelihood for substance relapse.   When one compares the impact of HIV on health-

related quality of life to the identified reasons for relapse, one discovers an alarming correlation

between the two (Adrian, 2006; Matoo, 2008).  An individual's response to either an HIV or

HCV diagnosis is likely to cause an increase in the precise stimuli often credited for relapse.

*HIV and quality of life.* Similar to co-occurring cancer and mental illness, one of the

primary issues in co-occurring HIV/HCV and SUDs is a reduction in health-related quality of

life (Gjeruldsen, Loge, Myrvang & Opjordsmoen, 2006; Honiden et al., 2006; Perez, et al, 2009;

Treloar, 2009).  With respect health related quality of life and co-occurring HIV and chemical

dependency, Honiden et al. (2006) compared the effect that an HIV diagnosis had on the health-

related quality of life in a sample of veterans and university students.  They found that

participants recently diagnosed with HIV experienced an overall decrease in health-related

quality of life, including, general health, physical functioning, social functioning, cognitive

functioning, pain, energy, mental health, health distress and sleep.

Perez (2009) found a decrease in quality of life in HIV patients due to increased levels of

depression, anxiety, and social isolation (Perez, 2009). The combination of these emotional

issues with pain, opportunistic infections, and difficult treatment regimens can cause addiction

relapse (Adrian, 2006).  In addition, family history of addiction, an increase in high risk sexual

behaviors, and an increase in undesirable life events can also increase relapse rates (Matoo,

Chakrabarti & Anjaiah, 2008). Finally, severe chronic stressors, acute stress, and substance

availability "have all been identified as important risks" to addiction relapse (Tate, Brown,

Glasner, Unrod & McQuaid, 2005).

      ***HCV and quality of life***. As with HIV, SUDs lead to lower health-related quality of life

in HCV patients (Gjeruldsen, Loge, Myrvang & Opjordsmoen, 2006). In this study, persons

with co-occurring substance use and HCV scored lower in eight of the nine health related quality

of life scales than did those people with one or neither of the illnesses. These quality of life

scales include social and physical functioning, emotional and physical role limitations, mental

health, vitality and pain. Like people with HIV, people with HCV experienced depression,

despair and meaning of life questions (Treloar, 2009).

      ***Treatment of HIV/HCV and SUD***. Despite t, the correlation between HIV and HCV and

lower health related quality of life treating HIV/and SUD as co-occurring disorders has

significant benefits to the individual, while treating HCV and SUD as co-occurring disorders had

fewer benefits.. Research found numerous factors related to both HIV and HCV diagnoses,

which have a mitigating effect on the potential for relapse. For instance, one study found that a

reduction in "family hassles" can have a significant effect on preventing relapse in HIV positive

African American women (Feaster et al., 2010). Likewise, a shift in "self-schema," or assisting

individuals overcome society's notion that people with HIV are somehow "bad" had a significant

correlation with an individual's desire to change their drug habits and other HIV risk behaviors

(Avants, Beitel & Margolin, 2005). Finally, within the HIV/AIDS population, participation in

regular 12-step self-help programs are effective in helping individuals with addiction disorders

achieve long-term abstinence (Farrell, Gowing, Marsden, Ling & Ali, 2005).

      Unlike the lived experience of persons with co-occurring HIV and SUDs, the HCV

illness experience not only leads to relapse, but also prevents people from seeking abstinence to

begin with (Treloar, 2009).  In a qualitative study (Treloar, 2008), HCV patients tended to

minimalize or trivialize the disease, if HCV was not actively affecting their health.  To illustrate

this point, one survey respondent believed that HCV was "no big deal," and said, "…I don't care.

I'll just keep going the way I am…all you wanna do is get more high (p. 1327)."  The absence of

symptoms thus has a chilling effect not only on relapse prevention, but also on abstinence itself.

> *Health promotion in drug using communities.* One method of curbing relapse and

increasing mortality in the HCV population involves organizing injection drug users as a

community (Carruthers, 2007).  Community has been described as an area that is targeted with

health promotion messages, and needle exchange programs to reduce drug related harm

(Carruthers, 2007).  In the case of injection drug users, a community consists of persons who

have a shared interest in using injection drugs.  In other words, members of the injection drug

community are their own advocates (Carruthers, 2007).  These communities provide services

such as testing clinics, locally relevant education and information resources, peer education, and

treatment referral.  Such communities encourage social interaction instead of social isolation to

challenge group norms and encourage behavior change (Carruthers, 2007). As previously

discussed, an increase in quality of life, combined with a decrease in social stigma, can lead to

prolonged abstinence (Treloar, 2009).

> *Multidisciplinary teams.* Additionally, the increased use of multidisciplinary teams has

had a positive impact on both addiction relapse and overall mortality in HCV infected persons

(Loftis, Matthews & Hauser, 2006). Such teams include primary care physicians, nephrologists,

nurse practitioners, mental health professionals, and substance abuse specialists.  These teams

provide education, screening and evaluation for psychiatric and SUDs, coordination of substance

abuse treatment, coordination of social supports, assessment of liver disease and antiviral

therapy.  The multidisciplinary team may also use substitution and maintenance therapy, as well as anti-craving agents, all designed to curb addiction relapse (Loftis, 2006).  The end result of this coordination of care may curb mortality due to both overdose and HCV.

*Drug replacement therapy.* Another primary means of preventing relapse among both HIV and HCV patients is the use of drug replacement therapy.  One such therapy involves using methadone as a replacement therapy for heroin injection.  In a five year study involving more than 5,000 injection drug users, of whom 51% were HIV positive, the introduction of low threshold methadone maintenance had a strong, presumptive effect on the decrease in mortality rates due to both overdose and HIV (Brugal et al., 2005).  In this case, relapse prevention for injection drug users, through drug replacement therapy, had a direct correlation to the decline in deaths from both overdose and HIV (Brugal et al. 2005).  Another study found that 43% of a randomized population of HIV positive people with heroin addiction did not relapse when being treated with a combination of naltrexone and fluoxetine (Krupitsky et al., 2006).

In further support of drug replacement therapy as a means of curbing addiction relapse in HIV patients, one study found that replacement programs using methadone or buprenorphine led to a decrease in both multiple sex partners, and in prostitution (Farrell, 2005).  The researchers concluded that substitution treatment allows dependent drug users the opportunity to stabilize their physical health and social supports prior to having to face the discomfort of withdrawal, ultimately enabling them to adapt to a drug free state (Farrell, 2005).

The interplay between co-occurring HIV and SUD has many similarities to co-occurring HCV and SUD.  The literature, however, suggests that each illness presents certain unique features and should, perhaps, be viewed independently.  Regardless, co-occurrence of either of these blood-borne illnesses with SUDs remains a significant health crisis.

**Substance use disorders and cancer.** Cancer is a pervasive illness that affects many different parts of the body. Much of the literature relates to the effect of continued alcohol and tobacco use on individuals with certain types of cancer (Paleri *et* al., 2010; Webber & Davies, 2011). Counselors are likely to encounter cancer patients as part of their practice and should be aware of the issues related to a cancer diagnosis. While much of the literature on this co-occurring disorder surrounds a limited view of SUDs, the studies present important insight into the negative impact of that ongoing SUDs have on this population. Additionally, research suggests that little is being done to screen such patients for co-occurring substance use.

*Prevalence and survival rates in co-occurring cancer and SUD.* Perhaps the most significant findings related to co-occurring addiction disorders and cancer concern the decrease in survival rates among cancer patients with SUDs. A meta-analysis of comorbidity in head and neck cancer reviewed and synthesized data from 77 research studies (Paleri *et* al., 2010). The combined results of the studies indicate that nearly 60% of the patients surveyed in the articles had co-occurring SUDs, predominately alcohol and nicotine (Paleri *et* al., 2010). Significantly, patients who had head or neck cancer *and* alcohol or tobacco addiction had a much lower survival rate than their substance-free cohorts (Paleri et al., 2010).

Another study followed more than 19,000 men and women who had been patients at a Danish outpatient alcohol treatment facility over a 38 year period (Thygesen et al., 2009). When compared to the overall expected cancer rate of the Danish people, those with severe SUDs were nearly twice as likely to develop a form of cancer, further bolstering the argument that ongoing SUD has a significant effect on the development of cancer.

Yet another study found a significant risk of oral and pharyngeal cancer among people with alcohol and/or tobacco addiction (Pelucchi, Gallus, Garavello, Bosetti, & La Vecchia,

2006).  People who were both heavy drinkers and smokers had a 300- times higher risk of oral

and pharyngeal cancer than those who neither drank nor smoked.   Thus, it can be implied that

alcohol relapse and subsequent use can have a similar effect on such individuals.

In those with existing advanced-stage cancers, one study showed that 18% screened

positive for an alcohol use disorder, which was actually *lower* than that reported nationally in the

United Kingdom (Webber & Davies, 2011).   A common alcohol screening instrument was

administered to 120 participants, all of whom were experiencing numerous physical symptoms

related to their cancer.  These physical symptoms are similar to those reported in cancer patients

with co-occurring mental health disorders, including fatigue, drowsiness, and pain  Despite the

physical symptoms of late stage cancer, less than 20% screened positive for an SUD, suggesting

that there was some evidence that acute, late stage cancer may have been a significant detractor

from co-occurring SUD (Webber & Davies, 2011).

One article did find a correlation of the feelings of helplessness and rage, which often

accompany a lung cancer diagnosis, and SUD relapse. Specifically, the article stated that feelings

of "overwhelming helplessness" and "narcissistic rage" are so powerful that they impede one's

ability to have concern over other illnesses, ultimately leading to relapse (Tepper, Dodes, Wool

& Rosenblatt, 2006). The authors agreed that the addicted person is likely to "actively do

something that he expects will make him feel better (take a drug, gamble, have a sexual

encounter, and so on)" so that he no longer feels helpless over a co-occurring physical illness (p.

261). Their findings supported the classic example of using substances or behaviors to cope with

the emotions that often accompany serious physical illness.

***Screening for SUDs in cancer patients.*** The most surprising data related to substance

abuse and cancer concerned the lack of proper substance use screening for both newly diagnosed

and advanced cancer patients.  In a review of 51 hospital-based studies involving 618 newly

diagnosed cancer patients, only three patients were determined to be abusing alcohol, despite 434

patients having other indicators of alcohol abuse in their medical records (Polednik 2007). The

study suggested that hospitals were using improper and inadequate screening methods to

determine whether newly diagnosed cancer patients had co-occurring SUDs.  The author

suggested that hospitals begin using multiple assessments and screenings for alcohol use in

newly diagnosed cancer patients in order to provide better cancer treatment (Polednik, 2007).

Other researchers (Botega *et* al. 2010) further indicated that hospital admission is an excellent

opportunity to screen for both psychiatric disorders and chemical dependency.

Patients with advanced cancer may also benefit from adequate alcohol screening (Parsons

*et* al., 2008).  In a study involving 665 patients with advanced stage cancer, those who screened

positive for alcoholism using the CAGE questionnaire (Ewing, 1984) manifested greater cancer-

related symptoms.  The researchers concluded that the failure to adequately screen for alcohol

disorders in patients could lead to inappropriate counseling and pharmacologic mismanagement,

resulting in increased patient and family suffering (Parsons et al. 2008).

**Summary**

From the literature, it appears that those who suffer from severe physical illnesses, such

as HIV, HCV, and various forms of cancer also suffer from SUDs.  Moreover, there is sufficient

evidence that people with severe physical illnesses also suffer from mental health disorders.

While there is disagreement as to disease onset and categorization, there is little debate over the

need to treat mental health issues along with the physical issues. A chronic or severe physical

illness can develop at any time during one's developmental process. The literature suggests

significant research into some areas of co-occurring disorders, but is nearly void of material

suggesting the interrelationship between chronic or severe physical illness, mental illness and

SUDs.  Counselors are trained to view individuals holistically and from a developmental

standpoint.  This developmental schema separates counselors from other mental health

professionals.  Since the literature lacks clear examples research aimed chronic or severe

physical illness, mental illness, *and* SUDs, this researcher asks the following question:  What is

the prevalence of mental health diagnoses, substance use disorders and physical illness?

**Method**

This quantitative study was a records review of participants that had a current Axis I or Axis II mental health diagnosis. The researcher then determined whether the participants had a co-occurring substance use disorder, and finally, whether participants had a co-occurring chronic or severe physical Axis III diagnosis. The research question involved studying possible relationships between Axis III diagnoses, mental health diagnoses, and substance use disorders.

The study was a retrospective medical records review of 300 participants at a hospital-based mental health clinic. Only those participants with an active mental health treatment plan were selected. Demographic information was developed based on age, gender, race, occupational status, and years in treatment. Additional data were collected on each participant's mental health diagnosis, as well as any SUD diagnosis, and any chronic or severe Axis III diagnosis.

The core focus of the research was to examine whether chronic or severe physical illness was related to mental health disorders and/or SUDs. Descriptive statistics were used to examine the data for relationships between Axis III diagnoses and co-occurring mental health diagnoses, and substance use diagnoses.

**Setting**

This study occurred in a major hospital-based mental health clinic in Western New York State. The participants came from both urban and suburban areas. The clinic accepted conventional insurance, as well as Medicaid and Medicare. Participants in this study were referred to the clinic in a variety of ways, including self-referral, referral by primary care physicians, other mental health providers, and acute psychiatric centers, including psychiatric emergency rooms and local mobile crisis units.

**Participants**

A random sample of the medical files of 300 current clients of a hospital-based mental

health clinic was chosen for evaluation.  The sample was selected based upon the clinic's

medical record number, which is a six digit numerical value ending in a three digit combination

ranging from 001 to 999.  The records are stored on shelving units that divide the records into

groups of 100, with a total possible sample size of more than 6,000 potential records.   The

researcher conducted a post hoc power analyses using GPower (Faul & Erdfelder, 1992) with

power (1 - β) set at 0.80 and α = 05, two-tailed. The analysis revealed a minimum sample size of

361.  Thus, the sample size was not quite large enough to be generalized to the entire patient

population.

**Demographics.** Of the sample, 26% ($n = 78$) were between 18 and 24 years of age, 24%,

($n = 72$) were between 25 and 34, 15% ($n = 45$) were between 35 and  44, 20.7% ($n = 62$) were

between 45 and 54, 9.7 ($n = 29$) were between 55 and 64, and 4.7% ($n = 14$) were 65 years of

age or older. 44% ($n = 132$) were male, and 56% (n=168) were female.  76.7% ($n = 230$)

identified themselves as Caucasian, 17% ($n = 51$) identified themselves African American or

Jamaican American, 4.3% ($n = 13$) identified themselves as Hispanic or Latino, 0.3% ($n = 1$)

identified themselves as Asian or Pacific Islander, and 1.7% ($n = 5$) identified themselves as

multi-racial.  20.7% ($n = 62$) reported full-time employment, 11.3% ($n = 34$) reported part time

employment, 10.3% ($n = 31$) reported being either full time students or homemakers, 22.7% ($n =$

68) reported that they were totally disabled, either physically or psychologically, 5% ($n = 15$)

reported that they were unemployed, but actively seeking employment, 14.7% ($n = 44$) reported

that they were unemployed, but not actively seeking employment, 10.3% ($n = 31$) reported

receiving welfare or other social services, and 5% ($n = 15$) reported being retired.  Finally, of the

sample, 45.3% ($n = 136$) reported engaging in their current treatment for one year or less, 14.3%

($n = 43$) reported engaging in their current treatment between 1 and 2 years, 16.3% ($n = 49$)

reported engaging in their current treatment between 3 and 5 years, and 24% ($n = 72$) reported

engaging in their current treatment for more than 5 years.

The demographic data most relevant to this study involved the current employment status

and the current length of time in treatment, as this information provides potential insight into the

effects of serious physical illness, mental illness, and chemical dependency on quality of life and

treatment efficacy and necessity.  The researcher did not have access to the current medical

condition of the participants, the date of onset of the medical conditions, nor the current

employment status of the participants, as this was a retrospective review.  Due to these

limitations, no further analysis of length of time in treatment, or quality of life was completed.

**Intervention and Materials**

The dependent categorical variable was the Axis I or Axis II mental health diagnosis.

Each Axis I or Axis II mental health diagnosis was assigned a numerical value based upon the

diagnosis.  For example, participants with an Axis I mood disorder were assigned the number

"1" for purposes of the dependent variable, participants with an Axis I anxiety disorder was

assigned the number "2,"  participants with "other" Axis I disorders  were assigned the number

"3," and individuals with any Axis II diagnosis were assigned the number "4."

The independent categorical variables were the Axis I substance use disorder and Axis III

disorders.  The independent variables were coded in a similar fashion to the Axis I mental health

diagnoses.  All substance use diagnoses were categorized by number.  Those with alcohol use

disorders were assigned the number "1," cannabis use disorders were assigned the number "2,"

cocaine use disorders were assigned the number "3," opioid use disorders were assigned the

number "4," amphetamine use disorders were assigned the number "5," sedative or hypnotic use

disorders were assigned the number "6."

A similar system of coding was used to describe the independent categorical variable

Axis III diagnosis. Participants reporting pain due to a general medical condition were assigned

the number "1," those reporting, HIV were assigned the number "2," those reporting Hepatitis C

"3," those reporting pain due to injury or accident were assigned the number "4," those reporting

a form of stomach or intestinal issues were assigned the number 5," those reporting a form of

cancer were assigned the number "6," those reporting Multiple Sclerosis were assigned the

number "7," those reporting another "chronic" illness were assigned the number "8," and another

"serious" illness were assigned the number "9."

The researcher developed the coding system for all of the data. All data was collected

from participant files.

**Data Collection**

The data were collected by reviewing both the "hard copy" of the participants' medical

files and the electronic medical records. The researcher chose 30 random shelving units from

which to obtain participant files. Ten files were then selected at random from each of the 30

shelving units. Each of the selected files was reviewed for a current, active treatment plan,

indicating that the participant was a current client at the clinic. Those files that did not have a

current treatment plan were replaced, and an alternate file was chosen. The percentage of files

without active treatment plans could not be determined by the researcher. In groups of 10, each

medical record was entered into the hospital's electronic health record system ("Cerner") to

determine the presence of a current, active Axis I or Axis II diagnosis, which was the only

requirement for inclusion in the study. The Axis I or Axis II mental health diagnosis was then

coded and recorded.  Next, the participant's file was examined for current or past substance use

disorders.  Since the researcher did not have access to all area chemical dependency treatment

centers, it is unknown whether each participant's SUD was truly current or in remission.  The

researcher chose to include all reported SUDs to be included in the study to better determine

whether a relationship existed among disorders.  These disorders were then coded and recorded.

Finally, the participant's file was examined for current or past Axis III diagnoses, which were

coded and recorded.  The sampling procedure was approved by the hospital's institutional review

board.

**Data Analysis**

Descriptive statistics were used to evaluate the data collected. It was found that 23.7% ($n$

= 71) had been diagnosed with pain due to a general medical condition; 3.7% ($n = 11$ ) had been

diagnosed with HIV;  3.3% ($n = 10$) had been diagnosed with a form of Hepatitis C;  6.7% ( $n =$

20) had been diagnosed with pain due to accident or injury;  6.7% ($n = 20$) had been diagnosed

with some form of stomach or intestinal illness;  7% ($n = 21$) had been diagnosed with a form of

cancer;  0.7% ($n = 2$) had been diagnosed with multiple sclerosis;  47% ($n = 141$) had been

diagnosed with another "chronic" illness; and  4.3% ($n = 13$),  had been diagnosed with another

"serious" illness.  "Other" chronic illnesses included:  11% ($n = 32$) diagnosed with

Fibromyalgia or "joint pain;"  10% ($n = 29$) diagnosed with Diabetes;  5.6% ($n = 17$) diagnosed

with Hypertension;  5.3% ($n = 16$) diagnosed with Rheumatoid or Osteoarthritis; 5% ($n = 15$)

diagnosed with Chronic Migraine;  4.3% ($n = 13$) diagnosed with Asthma;  3% ($n = 11$)

diagnosed with Thyroid Disease;  3% ($n = 11$) diagnosed with Heart Disease; and 3% ($n = 9$)

diagnosed with Kidney Disease.

The researcher then looked at the participant's mental health diagnosis. It was found that 78.7% ($n = 236$) had been diagnosed with an Axis I mood disorder; 53.7% ($n = 161$) had been diagnosed with an Axis I anxiety disorder; 8% ($n = 24$) had been diagnosed with an Axis I "other" disorder; and 12.7% ($n = 38$) had been diagnosed with an Axis II disorder.

The researcher then looked at each participant's file to determine whether they had ever been diagnosed with an SUD. The researcher found that 32.3% ($n = 97$) had been diagnosed with alcohol use disorders; 14% ($n = 42$) had been diagnosed with cannabis use disorders; 12.7% ($n = 38$) had been diagnosed with cocaine use disorders; 17.3% ($n = 52$) had been diagnosed with opioid use disorders; 1.3% ($n = 4$) had been diagnosed with amphetamine use disorders; and 3.3% ($n = 7$) had been diagnosed with sedative or hypnotic use disorders.

Descriptive statistics were analyzed to determine the overall number of individuals with Axis III diagnoses that also had concurrent Axis I mental health disorders and Axis I SUDs. Further analyses were conducted to compare the most common recurring combinations of co-occurring disorders across the spectrum of this research.

# Results

The researcher used SPSS version 20 to run frequency analyses to determine descriptive statistics and cross tabulations to determine whether relationships existed among the variables using Chi Square and Cramer's *V*.

## Frequency Analyses

Descriptive statistics concerning the participant population are described above and yielded few significant results. Frequency analyses were run to determine the total participant population that had any combination of Axis I or Axis II mental health diagnoses, Axis I SUDs, and Axis III medical disorders. Results indicated that 66% ($n = 198$) had both an Axis I or Axis II mental health diagnosis and an Axis III medical diagnosis. 50% ($n = 151$) had both an Axis I or Axis II mental health diagnosis and an Axis I SUD. 40 % ($n = 119$) had an Axis I or Axis II mental health diagnosis, and Axis I SUD, and an Axis III medical diagnosis.

## Cross-tabulation Analyses

Cross tabulation analyses were run to determine relationships among specific combinations of diagnoses. Chi Square analysis was used to determine whether a significant relationship existed ($p < .05)$ and Cramer's *V* analysis was used to determine the strength of the overall relationship. Results were then classified in four ways: Axis I or Axis II mental health disorders and Axis III diagnoses; Axis I SUDs and Axis III diagnoses; Axis I or Axis II mental health diagnoses and Axis I SUDs; and Axis I or Axis II mental health diagnoses, Axis I SUDs, and Axis III medical diagnoses. Significant results were found across all four domains.

**Mental health disorders and Axis III medical diagnoses.** Significant relationships were found in several combinations of mental health disorders and medical disorders. The most significant relationships included: Axis I anxiety disorders and Axis III pain due to a general

medical condition, $X^2$ (1, n = 45) = 3.529, p = .04; *Cramer's V* = .108, p = .06; Axis II

disorders and Axis III pain due to a general medical condition, $X^2$ (1, N = 38) = 6.018, p = .015;

*Cramer's V* =.142, p =.014; and Axis II disorders and Axis III stomach/intestinal diagnoses, $X^2$

(1, N = 6) = 5.820, p=.028; *Cramer's V* =.139, p = .016.

   **SUDs  and Axis III medical diagnoses.**  Significant relationships were found in

numerous combinations of Axis I SUDs and Axis III medical diagnoses.  The most significant

relationships included:  alcohol use disorders and Axis III Hepatitis C, $X^2$ (1, N = 7) = 6.708, p =

.015; *Cramer's V* = .15, p = .01;  alcohol use disorders and Axis III stomach/intestinal diagnoses

$X^2$ (1, N = 15) = 17.830, p = .001;  *Cramer's V* = .224, p = .001;  cocaine use disorders and

Axis III stomach/intestinal diagnoses $X^2$ (1, N = 6) = 5.820, p = .028;  *Cramer's V* = .139, p =

.016;  opioid use disorders and Axis III pain due to a general medical condition $X^2$ (1, N = 22) =

12.099, p = .001;  *Cramer's V* = .201, p = .001;  opioid use disorders and Axis III Hepatitis C $X^2$

(1, N = 7) = 20.025, p = .001;  *Cramer's V* = .258, p =.001; and opioid use disorders and Axis

III pain due to injury or accident $X^2$ (1, N = 13) = 33.979, p = .001; *Cramer's V* = .337, p =

.001.

   **Mental health disorders and SUDs.**  Significant relationships were found in numerous

combinations of SUDs and Axis I or Axis II mental health disorders.  The most significant

relationships include:  Axis I mood disorders and sedative/hypnotic use disorders $X^2$ (1, N = 8) =

5.006, p = .024; *Cramer's V* = .130, p = .024; Axis I anxiety disorders and cocaine use disorders

$X^2$ (1, N = 30) = 11.184, p = .001; *Cramer's V* = .193, p = .001; Axis I anxiety disorders and

opioid use disorders $X^2$ (1, N = 38) = 9.531, p = .001; *Cramer's V* = .178, p = .001; and Axis I

anxiety disorders and sedative/hypnotic use disorders $X^2$ (1, N = 9) = 5.492, p = .018; *Cramer's*

*V* = .135, p = .019.

**Mental Health Disorders, Axis I SUDs, and Axis III medical diagnoses.** Several sets of significant results were found in combination of the three variables and are summarized in Table 1. Significant results were found in the following categories: Axis III pain due to general medical condition, opiate use disorders, and Axis I mood and anxiety disorders; Hepatitis C, alcohol use disorders, and Axis I mood and anxiety disorders, and Axis II disorders; Hepatitis C, opioid use disorders, and Axis I mood and anxiety disorders, and Axis II disorders; Hepatitis C, sedative/hypnotic use disorders, and Axis I mood and anxiety disorders; Axis III pain due to injury or accident, opioid use disorders, and Axis I mood, anxiety and "other" disorders; Intestinal/stomach diagnoses, alcohol use disorders, and Axis I mood and anxiety disorders; and Intestinal/stomach diagnoses, cocaine use disorders, and Axis I mood disorders.

Table 1

*Relationships among Axis III Diagnoses, SUDs and Axis I and Axis II Mental Health Disorders*

| Diagnoses | $N$ | $X^2$ | $df$ | $p$ | Cramer's V | $p$ |
|---|---|---|---|---|---|---|
| PMC/ Opioid/ | | | | | | |
| Axis I Mood | 18 | 12.099 | 1 | .024 | .170 | .009 |
| Axis I Anxiety | 20 | 12.099 | 1 | .024 | .241 | .002 |
| HCV/ Alcohol/ | | | | | | |
| Axis I Mood | 6 | 6.708 | 1 | .015 | .180 | .004 |
| Axis I Anxiety | 7 | 6.708 | 1 | .015 | .245 | .002 |
| Axis II | 4 | 6.708 | 1 | .015 | .325 | .045 |
| HCV/Opioids | | | | | | |
| Axis I Mood | 7 | 20.025 | 1 | .001 | .302 | .001 |
| Axis I Anxiety | 6 | 20.025 | 1 | .001 | .277 | .001 |
| Axis II | 5 | 20.025 | 1 | .001 | .526 | .001 |
| HCV/ S/H | | | | | | |
| Axis I Anxiety | 3 | 8.198 | 1 | .039 | .172 | .003 |
| PAI/ Opioid/ | | | | | | |
| Axis I Mood | 10 | 33.979 | 1 | .001 | .330 | .001 |
| Axis I Anxiety | 9 | 33.979 | 1 | .001 | .318 | .001 |
| Axis I Other | 3 | 33.979 | 1 | .001 | .798 | .001 |
| Intestinal/ Alcohol/ | | | | | | |
| Axis I Mood | 9 | 17.830 | 1 | .001 | .232 | .001 |
| Axis I Anxiety | 8 | 17.830 | 1 | .001 | .230 | .003 |
| Intestinal/ Cocaine/ | | | | | | |
| Axis I Mood | 5 | 5.820 | 1 | .028 | .187 | .004 |

*Note.* PMC= pain due to general medical condition; HCV= Hepatitis C; S/H = sedative/hypnotics; PAI = pain due to

accident or injury

## Discussion

This research clearly supports the relationships described in the literature between mental illness and SUDs, physical illness and mental illness, and physical illness and SUDs. The additional significant relationships found in this study suggest that there is significant evidence of relationships between physical illness, mental illness and SUDs.

### Mental health diagnoses and SUDs

Significant research has been conducted on the correlations between mental health issues, such as Axis I depression and anxiety disorders and Axis II personality disorders and SUDs (e.g., Bowden-Jones et al., 2004; Conner et al., 2008; Davis et al., 2005; Xie et al., 2010). This research supports the notion that co-occurring mental health issues and SUDs are commonplace in a hospital-based mental health clinic. Research in this study indicates that 50% of those participants who had an Axis I or Axis II mental health diagnosis had a co-occurring SUD. The most prominent mental health diagnoses were Axis I mood disorders (78.7%, $n = 236$), Axis I anxiety disorders (53.7%, $n = 161$), and Axis II personality disorders (12.7%, $n = 38$). The most prominent SUDs were alcohol dependence (32.3%, $n = 97$), opioid dependence (17.3%, $n = 52$), cannabis dependence (14%, $n = 42$), and cocaine dependence (12.7%, $n = 38$).

The range of 50% co-occurring mental health/SUD diagnoses found in this study supports previous research. Conner et al. (2008) found 55% co-occurring mood disorder and SUD, while Davis et al. (2005) found 41% comorbid Axis I mood disorders and SUDs, with alcohol being the primary substance used. Bowden-Jones *et* al. (2004) found that 37% of participants with an Axis II personality disorder had a co-occurring SUD.

In the present study, strong relationships exist among those with co-occurring Axis I and Axis II mental health diagnoses and SUDs. These significant relationships include Axis I mood disorders and cannabis dependence, Axis I mood disorders and hypnotic/sedative dependence,

Axis I anxiety disorders and cocaine dependence, Axis I anxiety disorders and opioid

dependence, and Axis I anxiety disorders and hypnotic/sedative dependence.

**Mental health diagnoses and axis III medical diagnoses**

This study also supports the notion that relationships exist between physical illness and

mental illness.  While much of the literature is focused on "severe" physical illnesses such as

HIV, HCV, and Cancer, this study shed light on additional illnesses that may play a role in the

development of mental health issues.  While it is clear from the literature that there is a

relationship between HIV and mood disorders (e.g. Eller *et* al., 2010; Ferrando & Freyberg,

2008; Vranceau *et* al., 2008), and Cancer and mood disorders (e.g. Fox & Lyon, 2006; Kleiber *et*

al., 2009; Priscilla *et* al., 2011), little research has been conducted into the relationship between

other chronic illnesses and mental illness.

While this study did not find significant relationships between HIV or Cancer and mental

illness, the sample size of participants reporting these illnesses was relatively low (HIV, 3.7%, *n*

= 11, and Cancer, 7%, *n = 21*).  What this research does suggest is that relationships exist across

other spectrums of physical illness and mental illness.  Sixty-six percent (*n* = 198) of the

participants reported having an Axis I or Axis II mental health diagnosis and an Axis III

diagnosis.  By far, the most common Axis III diagnoses were "other" chronic illnesses (47%, *n* =

141), pain due to general medical condition (23.7% *n* = 71), pain due to accident or injury (6.7%

*n* = 20), and stomach/intestinal issues (6.7%, *n* = 20).  Small relationships were reported by

participants having Axis I anxiety disorders and pain due to a general medical condition, Axis II

personality disorders and pain due to a general medical condition, and Axis II personality

disorders and stomach/intestinal issues.

**Axis III medical diagnoses and SUDs**

There is also significant literature on co-morbid physical illnesses and SUDs (eg., Adrian, 2006; Honiden *et* al., 2006 Matoo, 2008; Treolar & Rhodes, 2009).  Again, these studies focused primarily on HIV, HCV, and Cancer.  While this study yielded no significant relationships with respect to HIV or Cancer, several significant relationships were found between HCV and SUDs.  In particular, small relationships were found between HCV and alcohol dependence, *Cramer's V* = .15 and HCV and opioid dependence, *Cramer's V* = .258.  The significant relationship between HCV and opioid dependence is readily explainable, since heroin is an injectable drug, and HCV is often spread through needle sharing (e.g. Carruthers, 2007; Treloar, 2008).  Less evident is the rationale behind the correlation between HCV and alcohol dependence, however, it is possible that Hepatitis B was incorrectly reported as HCV.  Likewise, one would expect to find similar findings with respect to HIV and opioid dependence because HIV is a blood-borne illness which can be transmitted through needle sharing in a similar manner as HCV; however, this research did not support any significant relationships.

This research did, however, suggest significant relationships *beyond* HIV, HCV, and Cancer and SUDs.  In particular, significant relationships exist between stomach/intestinal problems and alcohol dependence, *Cramer's V* = .244 (small), stomach/intestinal problems and cocaine dependence, *Cramer's V* = .139 (small), opioid dependence and pain due to general medical condition, *Cramer's V* = .201 (small), and opioid dependence and pain due to injury or accident, *Cramer's V* = .337 (moderate).  Further research would need to be conducted as to why these relationships exist; however, the researcher can hypothesize that both cocaine and alcohol metabolize, in part, in the stomach and intestines, and persons who live with chronic pain,

whether due to a medical condition or due to an accident are more likely to be prescribed opioid pain medication, leading to dependence.

**Axis III medical diagnoses, mental health diagnoses, and SUDs**

Finally, and perhaps most significantly, this research looked at relationships between physical illness, mental illness, and SUDs, for which there is a dearth of literature available. Simple frequency analysis indicated that 40% of the participants had co-occurring medical issues, mental health issues, and substance use disorders. Very little research has been conducted as to the implications of physical illness as the threshold for the development of mental illness and substance use disorders. This research provides initial empirical evidence that a relationship exists among the three domains. Table 1 above summarizes the significant relationships reported by the study participants.

Areas of interplay among the three domains include pain due to a general medical condition, mood disorders, anxiety disorders, and opioid dependence, leading the researcher to question what the "threshold" issue really was. Similar relationships were reported among participants who indicated pain due to accident or injury, Axis I mood and anxiety disorders, and opioid dependence. In addition, participants reported multiple instances of HCV, Axis I mood and anxiety disorders, Axis II disorders, and alcohol, opioid and sedative/hypnotic dependence, lending credence to the argument that HCV may be a threshold physical illness related to the development of both mental illness and SUDs. Additional research would need to be conducted to support this notion; since this researcher was unable to conclude which diagnosis came first. Finally, participants reported significant relationships among stomach/intestinal issues, Axis I mood and anxiety disorders, and alcohol and cocaine dependence.

**Implications for Mental Health Counselors**

Mental Health Counselors rely on strengths-based, client centered care. While the medical model of care, utilized by much of the mental health service delivery system, plays a key role in the mental health counselor's duties, counselors often move beyond the medical model to look for issues that occur along one's developmental spectrum that give rise to distress. Managed care is a reality for mental health counselors. Thus, mental health counselors must be skilled in DSM-IV based diagnostics. Despite the requirements of managed care, unlike other mental health professionals, mental health counselors prefer to utilize the DSM-IV as one tool in accurately diagnosing clients. Developmental characteristics and milestones are equally as important to mental health counselors in evaluating clients for treatment.

One aspect along the developmental spectrum that could prove important in determining the onset of psychological symptoms or SUDs is physical illness. Physical illness can affect one's quality of life in a variety of areas of functioning, leading to symptoms that mimic depression or anxiety. Likewise, the sudden onset of a severe or chronic physical illness may reduce an individual's level of coping skills, which may lead a client into substance abuse or dependence as a means of coping.

Mental health counselors are not medical doctors. As such, when clients come in for mental health services, it is rare that medical diagnoses are discovered at the time of evaluation, unless the client is forthright in their medical history, or unless the counselor spends a significant amount of time discussing medical conditions. While most mental health evaluations include a brief medical history, rarely do clinicians discuss history and onset of physical illness as part of the overall mental health diagnostic impression. As such, mental health counselors are unable to determine whether physical illness is the threshold issue on the developmental spectrum that

causes an individual to develop mental distress or SUDs.  If mental health counselors had better

insight into the originating factors that led to the development of mental illness and/or SUDs, it

is possible that alternative treatment protocols would be beneficial.

Absent a clear understanding of the client's physical illness, including type of illness,

severity of illness, effect of illness on quality of life, and date of onset of illness, mental health

counselors are basing diagnostic impressions on only one part of the individual.  Obtaining

additional information about physical illnesses would allow counselors to treat clients more

holistically, and may allow counselors to free themselves of some of the rigidity found in the

DSM-IV.  Physical illness and its effects on quality of life may presuppose mental health

diagnostic criteria, freeing the mental health professional to pursue different diagnostic and

treatment regimen.

**Study Limitations**

Several limitations prevented the researcher from making specific conclusions about

physical illness as the threshold issue for the development of mental illness and chemical

dependency.  This study was conducted during six months of the researcher's Master's

internship.  While the sample was random, the participant files did not contain the complete

medical history of each individual.  As such, the date of onset of Axis III medical conditions

could not be determined by the researcher. Thus, whether the Axis III medical illness was the

"threshold" issue for the development of Axis I and Axis II conditions could not be determined.

This study was also limited by the number of participants reporting incidents of cancer, HIV, and

HCV, about which, most of the literature describes.  More complete data would likely be

available by obtaining participants from specialized clinics treating these illnesses.

Another limitation of this study was the subjective definition assigned by the researcher to the term, "chronic" or "severe" physical illness. Since this study involved a retrospective medical records review, the researcher could not determine the whether the physical illness was in remission. The same is true of participants with SUDs. This additional information would have been helpful to help determine each participant's "threshold issue."

**Implications for Further Research**

The primary implication determined by this study was the existence of strong relationships among physical illness, mental illness, and SUDs. Future research into this area should be directed toward determining the "threshold issue." Research into the onset dates of physical illness, mental health diagnosis, and SUD diagnosis would prove helpful in making this determination. Access to complete medical files and access to multiple chemical dependency treatment programs may reinforce the initial findings described herein. Additional quantitative sources, such as onset dates could be used, or in-depth qualitative analysis could be used to help researchers better determine the "threshold issue."

Another broad implication for further research involves the notion of pain, whether due to general medical condition, accident or injury, or pain "syndromes" such as Fibromyalgia as the threshold for the development of co-occurring mental health disorders and SUDs. In this study, many participants reported pain as their primary Axis III diagnosis. 30% ($n = 91$) reported some form of chronic pain as an Axis III condition. Other chronic illnesses, including diabetes, heart disease, and kidney disease are also ripe areas for research into Axis III medical conditions as the threshold for the development of mental illness and SUDs.

**Conclusion**

While the scope and breadth of this research cannot determine the "chicken or the egg" phenomena, strong relationships exist among three significant domains of participant care. Counselors should be aware of the research implications in this study and use caution in over-diagnosing mental health disorders without first looking at Axis III medical conditions as the potential threshold issue. Counselors would be wise to spend some additional time discussing the onset of physical illness with clients to help determine whether mental health and substance use issues are better explained as developmental phenomena, instead of DSM-IV diagnoses. Counselors would also benefit from developing strong relationships with primary care physicians, nurse practitioners, and medical case managers to better understand the origin of a client's distress.

Appendix I

Institutional Review Board Approval

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