

# Towards the Psychosocial Treatment of Depressed Patients on Dialysis

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## Abstract

There is a growing literature on the bidirectional relationship between depression and various medical illnesses but depression in end stage renal disease has been understudied. In this paper we review the literature on the relationship between end stage renal disease and depression and then present a framework for the cognitive behavioral treatment of the depressed patient on dialysis. Case material from three different clients is then used to demonstrate some of the representative issues that arise in treatment in this population. This paper also explores the utility of using a subset of the Beck Depression Inventory [1] that focus on the cognitive factors of depression as a more sensitive measure for depression within the medically ill. Implications of the paper as well as indications for future research are discussed.

## INTRODUCTION

There are a variety of biological, psychological and social pathways that have been suggested between medical illness and depression [2], but there has also been increasing evidence that this relationship is bidirectional [3]. There is a growing literature in the fields of cardiovascular health [4], cancer [5], diabetes [6], and stroke [7], but depression in end stage renal disease has been understudied [8].

## END STAGE RENAL DISEASE

End stage renal disease (ESRD) is defined as the point when kidney function is at 10% of baseline [9]. According to the most recent estimates [10], ESRD affects some 20 million Americans, and 20 million more are at risk for developing chronic kidney disease. The leading causes of ESRD are diabetes, which accounts for 44% of new cases, and uncontrolled high blood pressure, which accounts for 35% of new cases.

The treatment options for ESRD fall into two broad categories: hemodialysis or kidney transplantation. Transplantation is a complex process that often involves waiting for years for an appropriate match. Subsequent to the transplantation there are often medical complications and transplanted kidneys remain viable only for an average of 5 years [11]. Dialysis is a medical procedure designed to remove wastes, toxins and fluids from the blood when the kidneys have failed. Living on dialysis is a perpetual

challenge, due to its demanding schedule of treatment, dietary restrictions and changes in function (See [12] for a patient's description). Life on dialysis also shares similarities with other chronic disorders in that there are threats to autonomy, depression, burden of illness, and change in functional status [13]. The life expectancy of dialysis patients is one- third to one- sixth of the normal US population [10].

## DEPRESSION IN ESRD

Despite the medical severity of kidney failure, the obvious challenges that life on dialysis poses, and the extraordinary medical cost of treatment, relatively little is known about the mental health of this population. The consensus in the literature is that depression is a common comorbid mental disorder for a subgroup of patients with ESRD [14,15,16,17,18,19]. However, the actual reported prevalence rates vary widely from 20% [17] to 44% [19]. Kimmel [14] points out that this wide variation can be attributed primarily to two factors. First, operational definitions of depression and measurement techniques are quite varied. Some studies [17] use clinical diagnosis of depression, or Likert-scale responses to a single question about depression, while others [19] use the Beck Depression Inventory (BDI) with a cutoff of 15. Second, and perhaps more importantly, there is an overlap of symptoms of depression with symptoms of chronic medical illness [14,16]. For example, there is an overlap of depressive and uremic symptoms. The depressive symptoms of psychomotor agitation or retardation, decreased appetite or

weight change, sleep disturbance and aches and pains are also often difficult to distinguish from the uremic symptoms of encephalopathy, anorexia/edema, sleep apnea/anemia/volume overload/congestive heart failure and neuropathy/arthropathy, respectively. Furthermore as Christensen and Ehlers [16] point out, the vegetative symptoms of depression (i.e. fatigue, cognitive deficits, decreased appetite, insomnia and decreased libido) can occur secondary to chronic renal failure in the absence of depression. They also note that the medications that many ESRD patients take may alter mood states.

A significant study [20] assessed if depression as measured by the BDI and its subset the Cognitive Depression Index (CDI) influences survival in patients treated for ESRD. The CDI is a 15 item subset of the BDI that contains the affective and cognitive components of depression while excluding the somatic qualities. The study found that the level of cognitive depression was significantly related to survival after 1 year and at the 2 year mark, initial Cognitive Depression Index scores significantly differentiated between the survivors and non-survivors. Although recently these authors [21] question the certainty with which this conclusion can be reached based upon available data, the notion that depression affects mortality in ESRD patients is supported.

Overall, little is also known about the treatment of depression in the ESRD patient [15]. Pharmacotherapy, particularly the SRI's has been demonstrated to be safe and efficacious in small samples of patients with kidney disease [18, 22]. However, to the best of our knowledge, there are no reported studies on the use of psychotherapy in depressed populations with ESRD.

Cognitive Behavioral Therapy (CBT) is a type of psychotherapy that focuses on the thoughts and actions of the client that maintain dysfunctional patterns. There is strong evidence that CBT is an efficacious treatment for depression with and without combination with pharmacotherapy [23]. One of the hallmark features of CBT is that it is a structured invention. Beck [24] originally outlined the essential steps for treating depression and since then standard clinical practice [25] is usually comprised of the following components: psychoeducation, behavioral activation and cognitive restructuring.

The assessment and treatment of the depressed dialysis patient requires some modification from standard protocols. It is essential to assess the patient's compliance to the medical regimen as part of the initial assessment. Being on

dialysis requires strict dietary adherence and the patient's potassium, phosphorous, and liquid intake should be inquired about and confirmed with the nutritionist. Additionally, the meaning of the illness to the person is always important to assess [26], but it is particularly true in end stage renal disease, as it is often a disease of neglect. Another important area to assess is the patient's change in roles since becoming ill. The impact of this serious chronic illness as well as its treatment can greatly alter work and family roles as well as the patient's self-perception. The biopsychosocial model of illness [27] is a novel concept for many patients and can serve as a useful heuristic in eliciting all of the changes that have occurred since their illness began and it may serve as a springboard for discussing holistic treatment and intervention.

When implementing a clinical intervention, it is important for the therapist to help the patient to differentiate between depression and medical illness. Feeling depressed is not a natural concomitant feature of ESRD, rather it is a separate, but common, comorbidity. Clients with ESRD often assume that depression is part of their illness, but this belief must be challenged. There are other dysfunctional cognitive schema that one could anticipate in the dialysis patient. In all chronic medical conditions, dependence is a common dysfunctional cognitive style. However, in the dialysis patient dependence has special significance as the person is continuously relying on a machine for life. The psychological toll of the knowledge that one can not survive totally independently can be quite devastating. Another common cognitive distortion is centered around the resultant changes in appearance from a variety of necessary surgeries. Depending on the length of time on dialysis, the locations of the dialysis access points, and the complications a particular patient has had, the disfigurement can vary from unnoticeable to severe.

Another cognitive phenomenon seen in ESRD patients is the teetering between abject hopelessness about their medical condition and euphoric delight in the prospect of a transplant. It is true that most transplant recipients report a higher quality of life [11], but the likelihood of getting an appropriate match and the complications of maintaining a donated organ makes the process of transplant quite complex and it is often not the panacea that patients believe it will be. Conversely, some patients are so depressed that they feel like getting on the transplant waiting list is hopeless. Although it can often takes years for a match to arrive, all medically eligible patients stand to benefit from being on the list. They can always rethink their decision if and when a

match comes up.

The following three cases, drawn as representative of our clinical experience, are meant to demonstrate the clinical complexity of this patient population and move toward a cognitive-behavioral conceptualization of depression treatment in the ESRD patient.

THE CASE OF JULIA  
ASSESSMENT

Julia, a 43 year-old Hispanic woman, was referred for treatment of her depression by her nephrology social worker. Julia had been on dialysis for five years secondary to complications from chronic hypertension and was on long-term disability. Julia described near constant pain in her knees and hips and was quite limited in her mobility. The demanding treatment schedule prevented her from working and kept her socially isolated. She had complications with her fistula, a surgical connection between an artery and a vein designed to provide enough blood flow to make dialysis effective and possible, which left both her arms disfigured. She also had a wound in her neck from another access port that had been necessary in the early part of her treatment.

On initial evaluation, Julia additionally reported a stressful home situation marked by conflict with her two teenage daughters and difficulties with her boyfriend of 7 years. Julia described low mood, decreased enjoyment from daily activities, increased appetite, hypersomnia, fatigue, feelings of uselessness, and mental confusion that had gradually worsened over the previous year to the point where she described these symptoms as “nearly constant.” She denied thoughts of suicide, but believed that “death was preferred,” as her medical condition was chronic and daily life “was almost unbearable.” Her initial BDI-II score was a 60 with a Cognitive Depression Index score of 42.

Figure 1

Table 1: Beck Depression Inventory-II and Cognitive Depression Index scores for 3 patients with depression and ESRD

Patient	Initial		Post-Treatment		Follow-up (3 mo)	
	BDI	CDI	BDI	CDI	BDI	CDI
Julia	60	42	10	2	7	1
Lamar	32	15	28	11	Not available	
Anna	55	37	27	12	26	12

Julia was diagnosed with Major Depressive Disorder and treatment options explained. Julia felt that she could benefit from psychotherapy, but refused a psychopharmacological consult as she feared any additional medication might interfere with her dialysis. She agreed that if after one month

she felt no improvement she would consult with a psychiatrist or her nephrologist about the safety of an antidepressant. Following this assessment, Julia engaged in individual cognitive-behavioral treatment for her depression.

INTERVENTION

The initial session was spent introducing the cognitive and behavioral conceptualizations of depression. Behavioral activation was presented in the second session with the goal of reintroducing rewarding behavior into her lifestyle. Julia responded well to this and within a few weeks she was out of the house or doing pleasurable activities most of the day. Soon thereafter, she started bringing “work” (knitting, correspondence, etc.) to do during her time at the dialysis center as she was now “so busy enjoying life.” In the fourth session cognitive restructuring was introduced. Automatic thought logs quickly identified irrational beliefs around her relationships with her daughters (“I am a bad mother”) and her boyfriend (“I am unattractive/unlovable.”) At this point, Julia's mood had already begun to improve and she readily identified her own irrational thoughts and substituted more rational ones. (See Table for Julia's and other clients' pre and post scores on the BDI and CDI.) At the seventh session Julia had a BDI score of 10 and a CDI index of 2. As the therapist was on site at the dialysis center, frequent informal check-ins indicated that the depression had truly remitted and that at a 3 month follow-up, Julia had a BDI of 7 and a CDI index of 1.

DISCUSSION

For Julia, her depression and dialysis were initially inextricably linked. She believed that to be on dialysis meant to be depressed. The disfigurement due to the permanent and visible signs of her treatment caused her to wear long sleeves and a high neckline, even in the privacy of her home. She felt that she was unattractive despite her boyfriend's reassurances. Perhaps most disabling and depressing for Julia was her functional dependence and sense of loss of control. She described herself as someone who was always in control and felt that she had been a strong matriarch of her family until her dialysis began. She believed that her illness quickly took control and she had fallen victim to its power. She stopped trying to be involved in her teenage daughters' lives, for she felt she no longer possessed the emotional strength, or mastery of life, that she felt was needed to guide them. She viewed her 18 year-old's pregnancy as her own failure and blamed and hated her dialysis for it. She reported that during the month after she found out her daughter was pregnant, she was not compliant with her dietary restrictions

to the point of defiance. She was not only being self-destructive, but also lashing out against what she believed to be the true cause of her daughter's pregnancy, her own dialysis. Cognitive Behavioral therapy was a powerful experience for Julia. It helped her reframe her entire illness experience from one of submission to coping. Julia was transformed from a 'victim' to a 'survivor' and a casualty of this transformation was her depression. At the end of treatment and at follow-up, Julia was living a vibrant life. She was still quite medically ill, but felt that she was still able to maintain her desired social role, despite the illness. The reduction of 50 points on the BDI-II corresponded to this significant clinical change.

### **THE CASE OF LAMAR ASSESSMENT**

Lamar, a 67 year old African American man, was referred by his nephrologist for the treatment of his depression. He had multiple health problems including heart disease, diabetes, hypertension, multiple sclerosis, obesity and a history of heart attack and stroke. Lamar was confined to a wheel chair and had limited use of his upper extremities; he required 24 hour nursing care. Lamar was retired from his position in his church, but still acted as an informal counselor and pastor. He spent most days involved in church activities, despite his lack of strength, near constant pain and moments of hopelessness and depression. He commented that "perhaps too often I draw lessons from the book of Job for the tastes of my congregation, but what can I do?"

Lamar had been on dialysis for 3 years but had substantial health problems for closer to 20 years. He was widowed and lived independently with nursing help, although he was usually hosting at least one of his 12 grandchildren. He had previously rejected a referral to a psychiatrist as he viewed taking medication as an "affront to his independent spirit." On initial evaluation, Lamar's BDI-II score was a 32 and his CDI index score was a 15. Lamar was diagnosed with an Adjustment Disorder with Depressed Mood and began cognitive behavioral intervention.

### **INTERVENTION**

Treatment focused on Lamar's feelings of impotence in life and his fears of his impending death. Challenges to providing CBT to Lamar were his frequent medical hospitalizations and his exhaustion, as he was often sleeping while being dialyzed and not able to engage in therapy. Lamar appreciated the sessions greatly, as he felt that with other people he was expected to keep up a façade of

tranquility, and in session he could more honestly express his negative emotions. Lamar also responded well to cognitive restructuring, and identified his unrealistically high expectations of himself. At three months into treatment Lamar had only 8 sessions because of his missing visits due to his medical complications, however, his BDI-II score was reduced to a 28 with a CDI index score of 10. Over the next few months Lamar's health increasingly worsened and he was admitted to hospice care and passed away soon after.

### **DISCUSSION**

Lamar's presentation could be taken in sharp contrast to Julia's. He was significantly more medically ill, but his religious faith and love of life kept him more vital. Lamar had a long and gradual adjustment period to his chronic illnesses and was able to maintain some of his church duties despite his increasingly failing health. It appears that his ability to hold on to his role as a comforter and religious guide provided him with a meaningful purpose and gave him the strength to continue. Lamar did not interpret his physical dysfunction and disfigurement as unattractiveness, for he had not linked his attractiveness as a person to his physical appearance in a long time. As he stated, he identified with the Biblical character of Job, who despite all varieties of pain and suffering, was able to maintain his faith.

The previous 20 years of Lamar's life were marked by chronic illness and he had been coping relatively well. Only at the latter part of his life, when his health significantly worsened, did he have difficulty maintaining his hope and optimism. It appears that Lamar's initial high BDI-II score was confounded by his medical illness. His Cognitive Depression Index score was 11 indicating that his cognitive style was not depressive. The symptoms he endorsed were primarily somatic, so his psychological improvement, as measured by the BDI was minor. Therapy was important to Lamar and he benefited from treatment. However, our belief was that the therapist's empathy and support, common to all therapies, rather than the particular CBT techniques themselves, accounted for his improved coping. Symptom-based measures of depression, like the BDI-II, however, only indicated a minor decrease in his depression score. His treatment was primarily palliative as his cognitions were neither greatly distorted nor his behaviors incongruent with his degree of medical impairment.

### **THE CASE OF ANNA ASSESSMENT**

Anna, a single 43 year old African American woman, had

been on dialysis for 4 years. She had a previous history of hypertension, an enlarged heart and had been in various degrees of heart failure for the past 4 years. Initial engagement was challenging; in the first meeting Anna asked, “What can a psychologist do for me? Are you going to fix my heart? My kidneys?” Anna's life was very restricted. She would only leave the house for dialysis and was alone most of the day. She lived with her daughter who was in her early twenties and was independent and minimally involved with her mother.

Anna believed that her health had begun to spiral down and that her imminent death was inevitable. She was identified as a “difficult patient” by the team as she was often hostile in her daily interactions with staff and isolated from the other patients. Anna was not very compliant with her dietary and fluid restrictions. She often wanted to leave dialysis early and was constantly complaining. Anna's cardiologist had requested several follow-up tests to assess her cardiac functioning, but Anna had not scheduled them. Her initial BDI-II score was a 55 (CDI-37). Anna's hostility and self-injurious behavior were viewed as symptoms of her depression and her loss of hope. After consultation with her nephrologist, it emerged that Anna's current cardiologist had not been ‘aggressive’ in her treatment and was satisfied maintaining her at her current level of cardiac functioning. However, Anna was so impaired that she lacked the requisite energy to do even the most basic tasks of daily living. Despite the dialysis team's encouragement, Anna never sought a second opinion from a local cardiologist who was known as being more ‘aggressive’ in her cardiac care.

### **INTERVENTION**

The first goal of treatment was to overcome Anna's ambivalence about seeing the cardiac specialist. The rest of the team had been forcefully encouraging her to “just go”, but had never inquired as to why she would not. Over the course of the initial two sessions, Anna reported that she had come to peace with her own death and the prospect of living longer was no longer appealing. She reported that she was “so constantly tired and emotionally exhausted that life was more of a ‘burden’ than an ‘opportunity’”. Anna was encouraged to think critically about her decision to commit suicide. This framing of her decision was quite powerful, as she never equated her passive resistance to her medical treatment as a direct attempt at her life. The idea of a rational suicide as compared to one that stems from depression was discussed and Anna agreed that it would be more rational to give up on herself after seeing the specialist.

The cardiologist saw her immediately and changed her entire medication regimen which improved her cardiac functioning and gradually increased her energy level. This extra energy was very motivational for Anna and she committed to continuing her struggles for an improved life. Anna gradually increased her daily level of functioning and her compliance with her dietary restrictions, and made an effort to work on improving her mood. An additional 6 sessions were spent on introducing rewards into Anna's life (renting videos, going out for a healthy dinner, etc.) and challenging the negativity of her thinking style. After a total of 8 sessions, Anna's BDI was reduced to a 27 with her Cognitive Depression Index at a 12.

### **DISCUSSION**

The driving force behind Anna's transformation was her conceptual shift from ‘hopelessness’ to ‘cautious optimism’. The initial sensitivity to her treatment readiness proved to be the difference in her receptivity. Despite several attempts of other members of the treatment team to convince her to seek a second opinion, Anna resisted. It was only by directly confronting her ambivalence that Anna, herself, was able to realize the depth of her hopelessness.

Another common issue highlighted by this case is the ease at which patients can become complacent with their poor health. ESRD is a serious medical illness and often causes complications in a variety of bodily systems. Following through on all requisite medical appointments is grueling in itself, especially when compounded by the rigorous dialysis schedule. It is easy for patients to become satisfied with the status quo, but it might be at the expense of their health. Anna's medical improvement was substantial. In therapy the challenging of her hopeless stance served as the catalyst for significant improvement. Her change on the BDI-II and in particular the Cognitive Depression Index subset reflected that the cognitive component of her depression greatly improved, but somatic features of her medical illness remained. Clearly Anna was still quite medically ill and functionally limited, but the reduction in the Cognitive Depression Index reflected the dramatic improvement in her mood.

### **CONCLUSIONS**

Patients who are on dialysis due to their end stage renal disease are at an increased risk for depression [14, 15]. These patients share many characteristics with other chronic illness populations that place them at risk for depression, but they also have some challenges unique to the dialysis experience.

Three cases were presented to highlight the clinical richness of this complex patient population. From these cases and our experience with this population we have derived a clinically based theoretical framework for addressing the depressed patient on ESRD. We suggest that standard CBT can be readily modified to address the unique issues of the depressed ESRD patient.

Despite the fact that all of the presented cases were diagnosed as being depressed, the actual presentation of their affective disorder was quite varied. Julia had both a depressive cognitive style and a paucity of rewarding behaviors. Lamar had difficulty coping with the seriousness of his illness, but his thoughts were rational and his behaviors appropriate to his situation. Alternatively, Anna had prematurely given in to her medical illness due to her hopelessness. The differences in their cognitive and behavioral patterns warranted a personalized approach for each of the patients [28]. A modified cognitive behavioral treatment was effective for each of the elements.

Another distinguishing feature of these presentations is their varied BDI-II scores. These cases suggest that one possible way to differentiate the 'emotionally depressed' from the 'somatically depressed' client is to look at the presenting cognitive style. The significant elevations in the Cognitive Depression Index for Anna and Julia were indications that they had a depressive cognitive style. However, Lamar, who had a relatively high BDI score had a lower Cognitive Depression Index score that more accurately reflected someone who was not truly severely depressed despite being quite medically ill. The use of the of the Cognitive Depression Index (CDI) of the BDI might be a useful indication that patients that display depressive thinking styles in addition to their somatic complaints could be identified as potentially well-suited for cognitive behavioral intervention.

Despite differences in their presentations of depression and their subsequent responsiveness to intervention, all three patients had been identified by the healthcare team as in need of mental health treatment. For all of them, a psychopharmacological referral was the first attempt at intervention. Despite having different explanations for their reluctance to follow through on this referral, all of the clients believed that their dialysis was so medically complex that they did not want additional medication, which may further stress their kidneys. Resistance to biological interventions makes the ESRD patient a particularly strong candidate for psychosocial interventions.

Another commonality shared by these chronically medically ill people was their loneliness and disconnectedness. Aside from disruptions to their roles at work and home, they also felt alienated from their fellow dialysis patients. The monthly support group that is offered by the clinic is often sparsely attended, despite the obvious loneliness of most of the patients and their need for social support. Perhaps the greatest similarity among the presented cases is the paramount role that being on dialysis took in their lives. Having ESRD and requiring hemodialysis was a major factor in their lives, and was not easily integrated into their daily routine or self-conceptualization. The treatment of this severely medically ill population requires the clinician to be compassionate to respect the medical difficulties of the patient and the tribulations of treatment, but resolute that depression need not necessarily be a comorbid feature of their ESRD.

In a healthcare system that is overextended, particularly with the paucity of well-trained CBT therapists working with clinical populations in hospital settings, developing strategies for resource allocation is paramount. Cognitive behavioral treatment promises to be an effective tool for treating depression in dialysis patients. Future research on the effective management of depression in ESRD patients is critical. Particularly useful would be the evaluation of a structured intervention using standardized assessment and treatment procedures and its impact on medical morbidity and mortality. Demonstrating that the treatment of comorbid depression is more than providing palliative complimentary care and is in fact, good medicine, is essential in a healthcare environment concerned primarily with the bottom line. It was the goal of this paper to present some of the complexity seen regularly on a dialysis unit and to promote greater clinical and scientific interest in an understudied patient population.

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