A study of the predisposing factors for depression in in-center chronic hemodialysis patients

Rachel Michelle Heimbigner

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A STUDY OF THE PREDISPOSING FACTORS FOR DEPRESSION IN
IN-CENTER CHRONIC HEMODIALYSIS PATIENTS

A Project
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Social Work

by
Rachel Michelle Heimbigner

June 1997
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IN-CENTER CHRONIC HEMODIALYSIS PATIENTS

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5/14/97
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ABSTRACT

This study examined the relationships between levels of education, work history and client-defined support and depressive symptomology experienced by chronic in-center hemodialysis patients. Data was gathered using a single, one time, distribution of a questionnaire which included the Beck Depression Inventory. One hundred and seventeen patients who had been on hemodialysis for no less than six months participated in this voluntary study. Both univariate and bivariate analysis of the gathered data was performed to test the significance of the findings. The significant findings of this study included positive relationships found between educational levels, work history and client-defined support and increased levels of depressive symptomology.

The findings of this study also indicated a significant relationship between marital status, housing and amount of time spent on dialysis in relation to increased levels of depression experienced by this sample. It was found that many variables impacted the levels of depression present within this sample of dialysis patients. Employment history, levels of support, educational backgrounds, home environment, marital status and length of time on dialysis had positive relationships with increased levels of depression. Further study of coping styles, self-esteem and interventions utilized with such a population would provide nephrology social workers with more substantial statistics from which to develop treatment plans and more defined objectives to assist dialysis patients with various levels of depression.
ACKNOWLEDGEMENT

I wish to thank my parents, Thomas and Donna Heimbigner, who have been supportive of my personal, professional and educational endeavors throughout my life. Their encouragement, patience, love and hope have been inspirational and instrumental in my completion of this Masters Degree in Social Work.

I am also thankful for Andre Estrada’s ability to tolerate me during this 3 year journey. The partnership that has developed between us has only been strengthened by this experience. Your computer expertise and willingness to assist me whenever possible was and always will be greatly appreciated. I so look forward to spending the remainder of our lives together.

Finally, I wish to thank Dr. Marjorie Hunt, who tolerated my frequent visits to her office. You helped to create a comfortable atmosphere in which my stress could sub-side and ideas could flourish. Thank you! All of you!

With Love and Appreciation Always,
Rachel
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Introduction

Depression is a major concern for practitioners working with chronically ill populations. Since the advent of dialysis, nephrology social workers have assisted patients suffering with End Stage Renal Disease (ESRD) in their adjustment to a new medical regimen (McKevitt, 1988, p. 32). Individuals suffering with ESRD no longer have adequate kidney function to rid their body of waste to maintain their health. Dialysis is a medical treatment that removes the body’s excess fluid and wastes from the bloodstream by the use of an artificial kidney machine. This form of dialysis is referred to as hemodialysis and is only a life sustaining treatment, not a cure. Peritoneal dialysis is a second form of dialysis treatment by which individuals dialyze themselves at home through the use of solution exchanges through a catheter which enters their peritoneum cavity.

When working with the dialysis population, researchers have used a psycho-social approach to assessing patient’s overall needs (McKevitt, 1988, p. 32). This approach has been useful for evaluating and exploring the external forces that impact the patient’s life. It also aids in focusing the patient’s attention on activities that promote personal growth and productivity. Such activities include family events, participation in a support group, employment, vocational rehabilitation and educational opportunities. These activities have often been absent, lost or ignored in the patient’s life, before and/or after their medical diagnosis of ESRD.

Many of these losses lead to depression which is viewed as a response to loss, real, threatened or fantasized (Levy, 1995, p. 624). This leads to the research question examined by this study, “What variables affect depression in chronic hemodialysis
patients?". This study tested the hypothesis that low levels of formal education, lack of work history and weakness of support system were variables that would be associated with high levels of depression among chronic hemodialysis patients in this sample. Peritoneal dialysis patients were not asked to participate in this study.

An assumption of this study was that patients who had a low level of education, little to no work history and a weak support system would experience greater levels of depression than patients who have completed high-school, been productive in the work force and viewed their support system as strong. This study was conducted to assist practitioners in the identification of predisposing factors that lead to depression in hemodialysis patients.

Relationship of Study to Direct Social Work Practice

Due to the multitude of problems facing dialysis patients, depression becomes a major focus of direct social work practice with this population. Depression has been highlighted as an important clinical problem in the ESRD population and is at times found to be a predictor of mortality in patients (Peterson, Mesquita, Kimmel, Simmens, Sacks & Reiss, 1995, p. 76). It becomes increasingly important that practitioners recognize factors which negatively impact a patient’s ability to cope with their life threatening illness. By acknowledging such variables as educational level, work history and strength of support system, a worker can better assist patients with their adjustment to new medical needs and life style changes.

Realizing a patient’s limitations and coping ability, workers can focus on educating the patient about their illness while helping them feel productive, and connecting them
with a support system. One’s vocational function and awareness of the life threatening
nature of illness have been found to be severe psychological stressors for patients (Cohen
& Tucker, 1994, p.22). Once individuals understand their medical needs, and feel useful,
their level of depression should decrease. The role of a support system is also vital in
decreasing patient’s depressive feelings. Becoming involved in a support group or
networking with other patients often decreases their feelings of isolation, despair and
loneliness. These outcomes are encouraging for social workers and enables them to
effectively assist patients through depression and into adjustment. By acknowledging
predisposing factors of depression, workers can better assist patients in developing a plan
of action to help them move through and overcome depressive feelings.

Practitioners can best assist depressed patients by fostering positive self-image and
receptivity using supportive techniques involving guidance, vocational rehabilitation, job
placement and communication between patient and family and patient and physician(Kahn,
1994, p.7). In addition, practitioners enable patients to incorporate healthy pleasures into
their lives, such as hobbies and social events. Much needs to be done to prevent patients
from becoming severely depressed and workers can begin by examining variables which
negatively impact the patients life. This refers directly to the hypothesis examined by this
study, which stated that, “low levels of education, lack of work history and weakness of
support system negatively impact depression in chronic hemodialysis patients.”

Having explored these variables and their relationships to one another, direct
practice social workers can change their practice methods to accompany the patient’s
need, such as learning difficulties due to low levels of education, feelings of helplessness
and inadequacy due to non-productive experiences in the work force, and feelings of isolation and aloneness due to inadequate support systems. Social workers can then recognize such needs and encourage patients through times of adjustment and maintenance.

This study provides clinical/medical social workers with information regarding the impact of education, productivity and support system on levels of depression in dialysis patients. Results demonstrating a high level of association between work history, educational level and support system, assist social workers in building programs within the dialysis environment that would better educate patients about their disease, provide them with valuable employment information, establish a supportive network of people and allow them an opportunity to participate in counseling to assist them with their particular situation and depressive level.

Literature Review

Previous research findings suggest that depression is a response to losses, whether these losses include work, family or health for chronic hemodialysis patients. Rodin (1994) found depression to be a common psychological response to the multiple threats, challenges and losses associated with medical conditions. ESRD is viewed as a chronic medical condition that requires regular dialysis treatments, dietary regulations and medications to maintain physiological homeostasis. One’s quality of life tends to diminish and the ability to participate in activities of daily living are impaired. Depression then occurs in response to a person’s chronic discomfort, inability to work and maintain social, family and marital relationships.
In summary, Rodin (1994) found that depressive symptoms may be reported in 25% or more of ESRD patients and one third of these patients may be suffering from major depression. Patients with fewer support systems and a history of depression were at greater risk for major depression. His study reinforces that poor support systems contribute to a patient’s level of depression and when a patient’s activity level, or productivity decreases, their level of depression increases and quality of life issues arise.

Quality of life becomes a focus of many patients and can be operationalized as having three major components: psychological, social and physical well-being. Constraints on normal activities of daily living have been found to reduce one’s enjoyment of close friendships, contentment with family, performance with work and satisfaction with life in general (Julius, Hawthorne, Carpentier, Kneisley, Wolfe & Port, 1989, p.61). Tanner (1991) found that patients ranked visits from family, optimistic attitude, determination and care by physician as contributing factors to a productive lifestyle.

In addition to changes in lifestyle and daily activities, dialysis schedules and or fatigue contribute to problems in maintaining relationships and employment for dialysis patients (Baldree, Murphy & Powers, 1982, p.110). Levels of depression then rise due to a person’s dependency on others and or lack of coping skills. The identification of stressors and coping styles provides useful information for planning individualized patient teaching and counseling aimed at enhancing better treatment outcomes.

In a study performed by Errico, Draccup, and Smith (1990), social support was hypothesized to moderate the relationship between loss of physical health and depression in chronic hemodialysis patients. A significant negative relationship was found between
depression and social support in patients who rated themselves as depressed. Findings indicated that social support may buffer the stress of chronic illness and therefore decrease depressive symptomology among hemodialysis patients. Losses that precipitated depression included the loss of financial stability, social position, employment and marital conflict or divorce. In addition to these losses, multiple hospital visits, tests and treatments contribute to a patient’s pain and fear of constant separation from family and friends (Ward, 1993, p.338). This study supports the hypothesis explored by this study and confirms in it’s own findings that low levels of support and employment negatively affect depression.

There is literature available on issues of support system, employment and depression effecting chronic hemodialysis patients. However, a patient’s level of formal education and it’s correlation to depression have not been studied. Despite this, the small amount of data available does show that a patient’s level of education positively correlates with coping effectiveness (Brock, 1990, p.242). With this in mind, depression would seem to occur more frequently in patients who had low levels of education because of their limited ability to cope with their illness.

Research Design and Method

This study was conducted to answer the question, “What variables are more likely to be associated with high levels of depression among hemodialysis dialysis patients?” The paradigm of this study was positivist and the design was descriptive. Using a survey design, the data collected tested the hypothesis that educational level, work history and support system can negatively impact a patient’s level of depression by showing
correlation's between these variables. Depression was the dependent variable and educational level, work history and support system were the independent variables.

Efforts were made to address potential problems of internal and external validity. Because data was only gathered once, using questionnaires, threats to internal validity included the instrumentation and the selection of participants. To limit the threats to internal validity, the questionnaires were carefully designed to represent all of the variables being explored. The selection process for participants was regulated by their time on dialysis and whether or not they were able to read and write in English. Thus, the sample of participants were only those who met the selection criteria.

External validity refers to whether or not data can be generalized to an entire population of interest. The data gathered from the participants can not be generalized to the entire hemodialysis population. The information gathered through the questionnaires can only be representative of the sample who have participated. This is because some patients were unable to participate in this study, due to time on dialysis, physical limitations and/or language barriers which prevented them from reading and answering the questionnaires. Thus, a certain percentage of hemodialysis patients were represented in this study, and the findings can not be generalized to include all hemodialysis patients.

The participants of this research study were chronic in-center hemodialysis patients who have been on dialysis for no less than six months. This stipulation was enforced to help avoid the initial feelings of depression and fear that are experienced by most patients when they are introduced into the dialysis environment. There were no other requirements for participation, other then the patient’s willingness to complete the entire questionnaire.
One hundred and seventeen out of a possible 160 hemodialysis patients, who met the participatory criteria, voluntarily participated in this study. One hundred and seventeen questionnaires were administered by unit social workers to in-center hemodialysis patients at eight different dialysis facilities within Riverside and Orange County Areas. These patients had been on in-center hemodialysis for greater than 6 months. Again, this time limit was enforced to avoid high levels of depression that are experienced by patients during their initial introduction and adjustment into their dialysis regimen.

The patients attended dialysis three times a week, either Monday, Wednesday, Friday or Tuesday, Thursday, Saturday. Data gathering time consisted of two days per unit. This allowed patients from both schedules to participate. All patients who met the above mentioned criteria were offered an opportunity to participate.

Data Collection and Instrumentation

Participants of this study were given a questionnaire with a consent form explaining the purpose of this study and concerns surrounding issues of confidentiality. Guidelines for answering the questions were explained to the patients at the time of distribution and participants were asked to direct their questions to the dialysis social workers. Patients were able to complete the questionnaire at the dialysis unit and returned it to the unit social worker following their treatment. No questionnaires were taken home or out of the dialysis unit.

The initial portion of the questionnaire pertained to demographic information, educational background, work history and support system. Demographic information
requested included age, gender, marital status, ethnicity and amount of time on dialysis. They were not asked to identify themselves by name. The questionnaire was eight pages in length and was accompanied by a consent form and a debriefing statement.

Education was defined as the last grade level completed by the participants. Educational background was answered by stating how many years of school were completed, whether or not any college courses had been completed and had the patient participated in a trade or vocational training program. An assumption of this study was that those patients with high school diplomas would have a lower level of depression than those patients who have not completed high school. Lower levels of education would therefore be seen as high risk factors when examining levels of depression in chronic hemodialysis patients.

Within this initial portion of the questionnaire participants were asked about their work history. Employment history was answered by marking one of the following: working, retired, on disability from work, homemaker or other. The term work history referred to the patient’s experience in the work force and whether or not he or she had worked at any time prior to and after their diagnosis of ESRD. Another assumption of this study was that those patients who had been forced to end work due to disability or had been less productive in the work force, were more likely to be at risk for depression than patients who had retired from work or felt that their work obligations had been fulfilled.

The proceeding portion of this questionnaire focused on the participants view of their support system and whether or not they viewed their support system as being
supportive of their medical needs. Support system was defined as any friend or family member that positively interacts with the patient. Social support was operationally defined as the comfort and assistance that an individual receives through interpersonal transactions with individuals or groups, including family members, friends or social groups.

The participants were asked about their living situation and answered using the following: alone, with family, with friends, in shared housing, board and care or skilled nursing facility. If they answered alone, they were asked if they participated in activities with friends or family members and how often these activities occurred. Following this question, using a likert scale, patients were asked to answer whether they felt that their support system was always, sometimes, seldom or never supportive of their medical needs. Lack of an adequate support system was then a third variable that this study hypothesized placed a patient at risk for depression.

The final pages of the questionnaire consisted of the Beck Depression Inventory Scale (BDI). The BDI was used because it has been found to be a reliable source to measure both cognitive and somatic depression symptoms and has been found to be a "well validated index of depression" (Beck, Ward, Mendelson, Mock & Barbaugh, 1961, p.561). The BDI examined depression by questioning the following: feelings of failure, disappointment, satisfaction, guilt, suicidal ideation, decision capabilities, irritability, sadness energy level, appetite, concerns about physical appearance and health, interest in sex, sleep patterns, and emotional patterns of crying.

Each question of the BDI has a score of 0 to 3. The higher degree of depression, the higher the participant’s score would be. An overall score was tabulated for each
patient’s BDI, with patient’s scores ranging from 0 to 63, asymptomatic to extremely severe depression. It was presumed that those patients scoring from mild to severe depression would have a low level of education, lack of work history, and weakness within their support system.

The strength of this questionnaire instrument was that it addressed all four elements of the hypothesis. This type of self-administered questionnaire was inexpensive and was retrieved from the participants easily. Questions from participants were explored with the social worker when the questionnaires were administered. This was done to avoid outsider participation and influence. Misunderstandings regarding the questionnaire and the purpose of this study was avoided when participants asked questions as they reviewed and answered their questionnaires. The completed questionnaires were collected at the end of the patient’s dialysis treatments. This allowed them 3 hours to review and complete the entire questionnaire.

A weakness of this questionnaire was that every question had to be answered by the participant in order for it to be admissible in the study. If, during coding, it was found that a question had been unanswered, the questionnaire was dismissed from the study. A fear was that some patients would find the questions personally intrusive or lengthy. This would negatively influence the response rate and quality of data being collected. To help prevent this, unit social workers were available to answer patient’s questions and concerns. At no time were patients forced to complete their questionnaires. If they felt uncomfortable with the questions, they were asked to discontinue their answers and their questionnaire were destroyed. Another limitation was that participants had to be able to
read and respond to questions in English only. Thus, only those patients who could read and write in English were invited to participate.

Data Analysis

To test the relationship of levels of education, work history and client-defined levels of support with levels of depression in in-center hemodialysis patients, data was tabulated and analyzed using univariate, bivariate and multivariate analysis. Relationships between the independent variables of work history, education and support and the dependent variable of depression were statistically compiled, using the EPi6 computer program for statistical analysis.

Bivariate analysis presented relationships between the independent variables of work history, educational level and client-defined support and the dependent variable of depression. Bivariate tables are found below to illustrate the relationships between education and depression, work history and depression, and client-defined support and depression. Chi square was performed to test whether the null hypothesis could be rejected. If the findings were .05 or less, than the null hypothesis was rejected. In cases where Chi square was inappropriate due to small cell size, the Kruskal-Wallis H statistic was computed.

Results

One-hundred and sixty(160) hemodialysis patients met the criteria to participate in this study. Of those , 117 voluntarily completed the questionnaires, yielding a 73.1 percent response rate. Socio-demographic characteristics of these participants are reported in Table 1. Univariate analysis was used to examine each variable independently.
Measures of central tendency for each variable, independent and dependent, were calculated.

Participants ranged in age from 21 to 84 with the mean age of 56. Of the 117 participants, 48.7 percent (N=57) were female and 51.3 percent (N=60) were male. Findings indicated that almost half, 49.6 percent (N=58), of the participants were married. The remaining 50.4 percent (N=59) were single, divorced, separated or widowed. A diverse ethnicity was present with 54.7 percent (N=64) Caucasian and the remaining 45.7 percent (N=53) of other nationalities.

Participants provided their current employment status and educational history. Work history was analyzed to find the mode of how many participants were working, retired, disabled or had never been employed. The most frequently occurring responses were retired, 40.2 percent (N=47), and disabled, 32.5 percent (N=38). Levels of education were examined to find the mode of participants who had and had not completed high school and those who had completed some college level courses or vocational training. The most frequently occurring variable was college and/or vocational training, equaling 59 percent (N=69) of participants.

Table 2 provides statistical findings relative to the amount of time participants had been on hemodialysis treatments. Findings indicated that 20.5 percent (N=24) of the participants had been on hemodialysis for greater than six months but less than a year, and the remaining 79.5 percent (N=83) had been receiving treatments for more than one year.
Table 1: Sociodemographics of Participants

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>20</td>
<td>17.1</td>
</tr>
<tr>
<td>Married</td>
<td>58</td>
<td>49.6</td>
</tr>
<tr>
<td>Divorced</td>
<td>12</td>
<td>10.3</td>
</tr>
<tr>
<td>Separated</td>
<td>6</td>
<td>5.1</td>
</tr>
<tr>
<td>Widowed</td>
<td>21</td>
<td>17.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>N=117</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ethnic Group</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caucasian</td>
<td>64</td>
<td>54.7</td>
</tr>
<tr>
<td>African American</td>
<td>11</td>
<td>9.4</td>
</tr>
<tr>
<td>Hispanic</td>
<td>33</td>
<td>28.2</td>
</tr>
<tr>
<td>Asian</td>
<td>3</td>
<td>2.6</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
<td>5.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>N=117</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Employment Status</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working</td>
<td>6</td>
<td>5.1</td>
</tr>
<tr>
<td>Retired</td>
<td>47</td>
<td>40.2</td>
</tr>
<tr>
<td>Disabled</td>
<td>38</td>
<td>32.5</td>
</tr>
<tr>
<td>Homemaker</td>
<td>19</td>
<td>16.2</td>
</tr>
<tr>
<td>Other</td>
<td>7</td>
<td>6.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>N=117</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Educational History</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without High School Diploma</td>
<td>27</td>
<td>23.1</td>
</tr>
<tr>
<td>High School Diploma or G.E.D</td>
<td>21</td>
<td>17.9</td>
</tr>
<tr>
<td>College or Vocational Training</td>
<td>69</td>
<td>59.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>N=117</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>
Table 2: Respondent’s Length of Time on Treatments

<table>
<thead>
<tr>
<th>Time on Hemodialysis Treatments</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 months &lt; 1 year</td>
<td>24</td>
<td>20.5</td>
</tr>
<tr>
<td>1 year &lt; 2 years</td>
<td>34</td>
<td>29.1</td>
</tr>
<tr>
<td>Greater than 2 years</td>
<td>59</td>
<td>50.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>N=117</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

Client-defined levels of support were examined by calculating the mode of participants who felt that their support system was weak or strong. Findings indicated that 76.9 percent (N=90) of the participants felt that their support system was always supportive, while the remaining 23.1 percent (N=27) felt that their support system was sometimes, seldom or never supportive.

Finally, depression was examined to locate the mode of participants who suffered with depression, according to the BDI. Nearly 43 percent (N=50) of the subjects scored within the range of “normal”, or exhibiting no depressive symptomology. Participants scoring within the range of mild to moderate symptomology included 33.3 percent (N=39), the remaining 23.9 percent (N=28) scored within the moderate to severe range of depressive symptomology.

To examine whether the participant’s employment history had a statistically significant relationship to depression, bivariate analysis was performed using the Kruskal-Wallis H analysis of variance. Findings indicated a positive relationship between employment history and the participant’s level of depression. The p-value was 0.051. Of
the 117 participants, 57 percent (N=67) presented with mild to severe depressive symptomology. A significant amount of the those on disability scored the highest on the BDI, with 71 percent (N=27) exhibiting depressive symptomology. Of the disabled participants, 42% (N=16) scored in the severe range of depression. A majority, 55 percent (N=26) of the retired participants presented with depressive symptomology. Twenty-three percent (N=6) of those retired participants scored within the severe range of depression. Only 5 percent of all participants were working at the time of this study. Of the working participants, 33 percent (N=2) presented with severe depressive symptomology. Forty-six percent (N=12) of those who declared “homemaker” or “other” scored within depressive ranges from mild to severe. These findings are located below in Table 3.

Table 3: Employment History Relative to Depressive Symptomology

<table>
<thead>
<tr>
<th></th>
<th>Working</th>
<th>Retired</th>
<th>Disabled</th>
<th>Homemaker &amp; Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Depressive Symptomology</td>
<td>4(67%)</td>
<td>21(44%)</td>
<td>11(29%)</td>
<td>14(54%)</td>
<td>50(43%)</td>
</tr>
<tr>
<td>Mild to Moderate Symptomology</td>
<td>0</td>
<td>20(43%)</td>
<td>11(29%)</td>
<td>8(31%)</td>
<td>39(33%)</td>
</tr>
<tr>
<td>Severe Depressive Symptomology</td>
<td>2(33%)</td>
<td>6(13%)</td>
<td>16(42%)</td>
<td>4(15%)</td>
<td>28(24%)</td>
</tr>
<tr>
<td>Total</td>
<td>6(100%)</td>
<td>47(100%)</td>
<td>38(100%)</td>
<td>26(100%)</td>
<td>117(100%)</td>
</tr>
</tbody>
</table>

Following employment history, participant’s education level was examined using the Kruskal-Wallis H analysis of variance. Bivariate analysis indicated a trend in the
participant’s level of depression and increase in educational background. Of the 69 participants who received college or vocational training, 59 percent (N=41), scored within the mild to severe range of depressive symptomology. Nearly 44 percent of the subjects who had college or vocational training that exhibiting depressive symptomology scored within the severe range of depression. Thus, it does appear that one’s educational level could strongly influence their level of depression when faced with a life threatening illness such as End Stage Renal Disease. Findings to support this trend are located in Table 4 below.

<table>
<thead>
<tr>
<th>Table 4: Educational History and Depressive Symptomology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without High School Diploma</td>
</tr>
<tr>
<td>-----------------------------</td>
</tr>
<tr>
<td>No Depressive Symptomology</td>
</tr>
<tr>
<td>Mild to Moderate Symptomology</td>
</tr>
<tr>
<td>Severe Depressive Symptomology</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Client-defined support was the final independent variable examined relative to the hypothesis of this study. Bivariate analysis was performed and the Kruskal-Wallis H analysis of variance was utilized to test the significance of these findings. The p-value equaled 0.055. Findings indicate that there is a significant relationship between the
participant's level of depression and subjective feelings of support. Table 5 presents these findings.

Table 5: Client-Defined Support and Depressive Symptomology

<table>
<thead>
<tr>
<th></th>
<th>Always Supportive</th>
<th>Seldom to Never Supportive</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Depressive Symptomology</td>
<td>42 (47%)</td>
<td>8 (16%)</td>
<td>50 (43%)</td>
</tr>
<tr>
<td>Mild to Moderate Symptomology</td>
<td>30 (33%)</td>
<td>9 (33%)</td>
<td>39 (33%)</td>
</tr>
<tr>
<td>Severe Depressive Symptomology</td>
<td>18 (20%)</td>
<td>10 (37%)</td>
<td>28 (24%)</td>
</tr>
<tr>
<td>Total</td>
<td>90 (100%)</td>
<td>27 (100%)</td>
<td>117 (100%)</td>
</tr>
</tbody>
</table>

Seventy percent (N=19) of the participants who felt that their support system was seldom to never supportive scored higher on levels of depression than the 53 percent (N=48) who felt that their support system was always supportive. Thirty-seven percent (N=10) of those who felt that their support system was seldom to never supportive scored within the severe range of depressive symptomology, while only 20 percent of those who felt that their support system was always supportive scored within the severe range.

Summary of Findings Relative to Hypothesis

In relation to the hypothesis of this study, findings indicate that one's educational level, feelings about their support system and employment history have a positive relationship with their level of depression. Significant relationships were found between
levels of education and increase in depressive symptomology. Unlike the hypothesis which stated that lower levels of education would increase the likelihood of depression in in-center hemodialysis patients, findings indicate that those participants with higher educational backgrounds experienced increased levels of depressive symptomology.

Previous research indicated that patient's levels of education positively correlated with coping effectiveness (Brock, 1990, p.242). The hypothesis of this study was not supportive of those findings. The opposite was found in this study. Participants with high educational backgrounds actually presented with greater levels of depressive symptomology. Further analysis in this area is desirable in order to specify coping capabilities of the participants in relation to their levels of education.

Employment history was also found to be significant in relation to levels of depression experienced among the participants of this study. Participants who were disabled experienced depression at a much higher rate than those participants who were retired, working or homemakers. These findings indicate that work history does have a positive relationship to depression for the participants of this study. According to the literature, subjective feelings of productivity and the awareness of a life threatening illness can be linked to levels of depression in chronic dialysis patients (Cohen & Tucker, 1994, p.22). Rodin (1994) stated that loss of employment due to illness has been linked with high levels of depression among the dialysis population. This study is supportive of those findings.

The findings of this study also support Ward's (1993) findings that employment history affects levels of depression for the dialysis population. Ward (1993) found that low
levels of social support negatively impacted patients levels of depression. The present study supports those findings. Results of this study indicate that client-defined support effected levels of depression experienced by the participants of this study. Those participants who felt that their support system was seldom to never support presented with higher levels of depressive symptomology than those participants who felt that their support system was always supportive.

In addition to the above mentioned findings, other significant findings relative to the participants of this study were found. Marital status and it's relationship to depression was examined using the Kruskal-Wallis H analysis of variance. The p-value was equal to 0.044. A significant relationship was found between participant's marital status and their levels of depressive symptomology.

Sixy-four percent (N=25) of those participants who were divorced, separated or widowed presented with mild to severe depressive symptomology. Seventy-five percent (N=15) of the single participants presented with depressive symptomology, while only 46 percent (N=27) of the married participants presented with mild to severe depressive symptomology. Nearly 61 percent (N=17) of the participants who experienced severe depressive symptomology were single, separated, divorced or widowed. These findings indicate that marital status impacts levels of depression in this sample of chronic hemodialysis patients. Previous research supports these findings that marital conflict or dissolution of relationships precipitate depression among hemodialysis patients (Ward, 1993, p.338).

Another significant finding in relation to the subjects of this study included the
amount of time spent on dialysis in relation to increased levels of depression. It was found that 60 percent (N=56) of the participants who had been on dialysis for greater than 1 year experienced higher levels of depression than the nearly forty-six percent (N=11) who had been on treatments for greater than 6 months but less than a year. There appears to be a trend in the levels of depression experienced by participants as time on dialysis treatments increased.

Finally, housing was found to have a significant relationship with participant’s level of depression. The Kruskal-Wallis H analysis of variance was utilized to test the relationship between housing and depression. A p-value of 0.02 was found. Eighty-six percent (N=18) of the participants who were living alone presented with mild to moderate depressive symptomology compared to 52 percent (N=44) of the participants that were living with family members. Housing status does appear to have a positive relationship with increased levels of depression among the participants of this study.

Discussion

As stated above, the findings of this study indicate that there are positive relationships between educational levels, employment history and client-defined levels of support and depression symptomology experienced by in-center chronic hemodialysis patients. In addition to these findings, marital status, length of time on dialysis and housing status all impacted levels of depression experienced by the subjects in this study.

The findings of this study have supported previous research in the area of depression and the dialysis patient and has created new pathways for additional research. It would have been advantageous to explore the participant’s coping capabilities and levels
of self-esteem. These variables would be most useful in future studies relating to ESRD patients and their levels of depression. Nephrology social workers, in their attempts to work more effectively with dialysis patients, must concern themselves with the internal and external systems interacting with patients and their ability to cope with the losses they experience due to their chronic illness.

Conclusion and Implications for Social Work Practice

Direct social work practice with patients focuses closely on their abilities to cope with depression. Spending an increased amount of time with patients may be necessary in order to examine such variables as work history, current levels of productivity, educational background and skill level, strength of support systems, marital status and housing environment to help patients recognize and cope with depression.

Increased social work interventions relative to the development of social supports and community resources may be a significant link in lowering patient’s levels of depression. As indicated by this study, many variables impact patient’s levels of depression. Promoting involvement of social supports, participation in vocational rehabilitation and outside activities that raise a patient’s self image may indeed prove to be interventions that decrease depressive symptomology among the ESRD population. Future studies, involving a pre-test and post-test, may wish to explore the above mentioned variables and interventions to test whether depressive symptomology would decrease following increased social work involvement with the patient and his/her family and outside resources.
Appendix A

Questionnaires

PLEASE BE SURE TO READ EACH QUESTION CAREFULLY. IF YOU HAVE ANY QUESTIONS NOTIFY YOUR UNIT SOCIAL WORKER. THANK YOU FOR TAKING TIME TO PARTICIPATE IN THIS STUDY.

AGE_______

GENDER:
_____FEMALE
_____MALE

MARITAL STATUS:
_____SINGLE
_____MARRIED
_____DIVORCED
_____SEPARATED
_____WIDOWED

ETHNICITY:
_____CAUCASIAN
_____AFRICAN AMERICAN
_____HISPANIC
_____ASIAN
OTHER:______________

AMOUNT OF TIME ON DIALYSIS (MONTHS & YEARS):______________
EMPLOYMENT HISTORY: _____ WORKING

_____ RETIRED

_____ ON DISABILITY FROM WORK

_____ HOMEMAKER

_____ OTHER: ____________________________

EDUCATIONAL HISTORY:
YEARS OF EDUCATION COMPLETED: ____________
HAVE YOU EVER COMPLETED ANY COLLEGE COURSES: YES  NO
HAVE YOU EVER PARTICIPATED IN
A TRADE OR VOCATIONAL TRAINING YES  NO
PROGRAM?

SUPPORT SYSTEM:
DO YOU LIVE: _____ ALONE

_____ WITH FAMILY

_____ WITH FRIENDS

_____ IN SHARED HOUSING

_____ BOARD AND CARE

_____ SKILLED NURSING FACILITY

IF YOU LIVE ALONE, DO YOU PARTICIPATE IN ACTIVITIES WITH FRIENDS OR OTHER FAMILY MEMBERS? YES  NO

IF SO, HOW OFTEN (DAILY, WEEKLY, MONTHLY, ETC.): ____________

DO YOU PARTICIPATE IN ACTIVITIES WITHIN THE COMMUNITY?

YES  NO

WHAT TYPE OF ACTIVITIES? ____________________________
DO YOU FEEL THAT YOUR FAMILY IS SUPPORTIVE OF YOU AND YOUR MEDICAL NEEDS?

____ ALWAYS
____ SOMETIMES
____ SELDOM
____ NEVER

EXPLAIN: __________________________________________________________

____________________________________________________________________

THE FOLLOWING PORTION OF THE QUESTIONNAIRE CONSISTS OF 21 GROUPS OF STATEMENTS. AFTER READING EACH GROUP OF STATEMENTS CAREFULLY, CIRCLE THE NUMBER (0, 1, 2 OR 3) NEXT TO THE ONE STATEMENT IN EACH GROUP WHICH BEST DESCRIBES THE WAY YOU HAVE BEEN FEELING THE PAST WEEK, INCLUDING TODAY. IF SEVERAL STATEMENTS WITHIN A GROUP SEEM TO APPLY EQUALLY WELL, CIRCLE EACH ONE. BE SURE TO READ ALL THE STATEMENTS IN EACH GROUP BEFORE MAKING YOUR CHOICE.

1. 0 I DO NOT FEEL SAD.
   1 I FEEL SAD.
   2 I AM SAD ALL THE TIME AND I CAN’T SNAP OUT OF IT.
   3 I AM SO SAD OR UNHAPPY THAT I CAN’T STAND IT.

2. 0 I AM NOT PARTICULARLY DISCOURAGED ABOUT THE FUTURE.
   1 I FEEL DISCOURAGED ABOUT THE FUTURE.
   2 I FEEL I HAVE NOTHING TO LOOK FORWARD TO.
   3 I FEEL THAT THE FUTURE IS HOPELESS AND THAT THINGS CANNOT IMPROVE.
3. 0 I DO NOT FEEL LIKE A FAILURE.
     1 I FEEL I HAVE FAILED MORE THAN THE AVERAGE PERSON.
     2 AS I LOOK BACK ON MY LIFE, ALL I CAN SEE IS A LOT OF
        FAILURES.
     3 I FEEL I AM A COMPLETE FAILURE AS A PERSON.

4. 0 I GET AS MUCH SATISFACTION OUT OF THINGS AS I USED TO.
     1 I DON’T ENJOY THINGS THE WAY I USED TO.
     2 I DON’T GET REAL SATISFACTION OUT OF ANYTHING
        ANYMORE.
     3 I AM DISSATISFIED OR BORED WITH EVERYTHING.

5. 0 I DON’T FEEL PARTICULARLY GUILTY.
     1 I FEEL GUILTY A GOOD PART OF THE TIME.
     2 I FEEL QUITE GUILTY MOST OF THE TIME.
     3 I FEEL GUILTY ALL OF THE TIME.

6. 0 I DON’T FEEL I AM BEING PUNISHED.
     1 I FEEL I MAY BE PUNISHED.
     2 I EXPECT TO BE PUNISHED.
     3 I FEEL I AM BEING PUNISHED.

7. 0 I DON’T FEEL DISAPPOINTED IN MYSELF.
     1 I AM DISAPPOINTED IN MYSELF.
     2 I AM DISGUSTED WITH MYSELF.
     3 I HATE MYSELF.
8. 0  I DON’T FEEL I AM ANY WORSE THAN ANYBODY ELSE.
     1  I AM CRITICAL OF MYSELF FOR MY WEAKNESSES OR
         MISTAKES.
     2  I BLAME MYSELF ALL THE TIME FOR MY FAULTS.
     3  I BLAME MYSELF FOR EVERYTHING BAD THAT HAPPENS.

9. 0  I DON’T HAVE ANY THOUGHT OF KILLING MYSELF.
     1  I HAVE THOUGHTS OF KILLING MYSELF, BUT I WOULD NOT
         CARRY THEM OUT.
     2  I WOULD LIKE TO KILL MYSELF.
     3  I WOULD KILL MYSELF IF I HAD THE CHANCE.

10. 0  I DON’T CRY ANYMORE THAN USUAL.
      1  I CRY MORE NOW THAN I USED TO.
      2  I CRY ALL THE TIME NOW.
      3  I USED TO BE ABLE TO CRY, BUT NOW I CAN’T CRY EVEN
          THOUGH I WANT TO.

11. 0  I AM NO MORE IRRITABLE NOW THAN I EVER AM.
      1  I GET ANNOYED OR IRRITATED MORE EASILY THAN I USED
          TO.
      2  I FEEL IRRITATED ALL THE TIME NOW.
      3  I DON’T GET IRRITATED AT ALL BY THE THINGS THAT USED
          TO IRRITATE ME.

12. 0  I HAVE NOT LOST INTEREST IN OTHER PEOPLE.
      1  I AM LESS INTERESTED IN OTHER PEOPLE THAN I USED TO BE.
      2  I HAVE LOST MOST OF MY INTEREST IN OTHER PEOPLE.
      3  I HAVE LOST ALL OF MY INTEREST IN OTHER PEOPLE.
13.  0  I MAKE DECISIONS ABOUT AS WELL AS I EVER COULD.
1    I PUT OFF MAKING DECISIONS MORE THAN I USED TO.
2    I HAVE GREATER DIFFICULTY IN MAKING DECISIONS THAN
3    BEFORE.
3    I CAN'T MAKE DECISIONS AT ALL ANYMORE.

14.  0  I DON'T FEEL I LOOK ANY WORSE THAN I USED TO.
1    I AM WORRIED THAT I AM LOOKING OLD OR UNATTRACTIVE.
2    I FEEL THAT THERE ARE PERMANENT CHANGES IN MY
3    APPEARANCE THAT MAKE ME LOOK UNATTRACTIVE.
3    I BELIEVE THAT I LOOK UGLY.

15.  0  I CAN WORK ABOUT AS WELL AS BEFORE.
1    IT TAKES AN EXTRA EFFORT TO GET STARTED AT DOING
2    SOMETHING.
2    I HAVE TO PUSH MYSELF VERY HARD TO DO ANYTHING.
3    I CAN'T DO ANY WORK AT ALL.

16.  0  I CAN SLEEP AS WELL AS USUAL.
1    I DON'T SLEEP AS WELL AS I USED TO.
2    I WAKE UP 1-2 HOURS EARLIER THAN USUAL AND FIND IT
3    HARD TO GET BACK TO SLEEP.
3    I WAKE UP SEVERAL HOURS EARLIER THAN I USED TO AND
3    CANNOT GET BACK TO SLEEP.

17.  0  I DON'T GET MORE TIRED THAN USUAL.
1    I GET TIRED MORE EASILY THAN I USED TO.
2    I GET TIRED FROM DOING ALMOST ANYTHING.
3    I AM TOO TIRED TO DO ANYTHING.
<table>
<thead>
<tr>
<th></th>
<th>18. MY APPETITE IS NO WORSE THAN USUAL.</th>
<th>19. I HAVEN’T LOST MUCH WEIGHT, IF ANY, LATELY.</th>
<th>20. I AM NO MORE WORRIED ABOUT MY HEALTH THAN USUAL.</th>
<th>21. I HAVE NOT NOTICED ANY RECENT CHANGE IN MY INTEREST IN SEX.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 MY APPETITE IS NOT AS GOOD AS IT USED TO BE.</td>
<td>1 I HAVE LOST MORE THAN 5 POUNDS.</td>
<td>1 I AM WORRIED ABOUT PHYSICAL PROBLEMS SUCH AS ACHES AND PAINS, OR UPSET STOMACH, OR CONSTIPATION.</td>
<td>1 I AM LESS INTERESTED IN SEX THAN I USED TO BE.</td>
</tr>
<tr>
<td></td>
<td>2 MY APPETITE IS MUCH WORSE NOW.</td>
<td>2 I HAVE LOST MORE THAN 10 POUNDS.</td>
<td>2 I AM VERY WORRIED ABOUT PHYSICAL PROBLEMS AND IT’S HARD TO THINK OF MUCH ELSE.</td>
<td>2 I AM MUCH LESS INTERESTED IN SEX NOW.</td>
</tr>
<tr>
<td></td>
<td>3 I HAVE NO APPETITE AT ALL ANYMORE.</td>
<td>3 I HAVE LOST MORE THAN 15 POUNDS.</td>
<td>3 I AM SO WORRIED ABOUT MY PHYSICAL PROBLEMS THAT I CANNOT THINK ABOUT ANYTHING ELSE.</td>
<td>3 I HAVE LOST INTEREST IN SEX COMPLETELY.</td>
</tr>
</tbody>
</table>
Appendix B

Informed Consent

The study in which you are about to participate is designed to investigate the relationship between work history, level of education, strength of support system and depression. This study is being conducted by Rachel Heimbigner under the supervision of Dr. Marjorie Hunt, professor of Social Work. This study has been approved by the Human Subjects Committee of the Department of Social Work at California State University San Bernardino.

Please be assured that any information you provide will be held in strict confidence by the researcher and unit social workers. At no time will your name be reported along with your responses. All data will be reported in group form only. At the conclusion of this study, you may receive a report of the results.

Please understand that your participation in this research is totally voluntary and you are free to withdraw at any time during the study without penalty. If you choose not to answer all questions, your questionnaire will automatically be dismissed from use in this study.

I acknowledge that I have been informed of, and understand, the nature and purpose of this study, and I freely consent to participate. I acknowledge that I am at least 18 years of age.

Participant’s Signature ___________________________ Date ___________________________

Researcher’s Signature ___________________________ Date ___________________________
Appendix C

Debriefing Statement

This is a study of the relationships between work history, level of education, support system and depression in hemodialysis patients. The questionnaire asked questions about all four of these variables. Present and future concerns about this can be answered by the researcher or your unit social worker.

You were asked to sign a consent form prior to your participation in this study. It has been detached from your questionnaire and stored separately. Confidentiality will be maintained throughout this study. The results of this study will be made available for patients to review in June of 1997. If you need to talk more about the content of this study, please contact Rachel Heimbigner at (909) 682-2700.

Thank you again for taking the time to participate in this study.
REFERENCES


