# DIFFERENCES IN QUALITY OF LIFE AND DEPRESSION BETWEEN HEMODIALYSIS AND PERITONEAL ARAB PATIENTS

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## INTRODUCTION

- Patients with end-stage renal disease require kidney replacement treatment in order to survive. The patients may use two types of treatments until the end of their lives or until they have kidney transplantation: hemodialysis (HD) or peritoneal dialysis (PD).
- Patients treated with dialysis develop complications caused by the disease and its treatment and due to an acute decline in quality of life despite an increase in life expectancy.
- A high prevalence of depression was observed among ESRD patients. The source of the depression could be an underlying condition of chronic depression and/or the treatments themselves.
- Decrease quality of life and increase depression, along restrictions and consumption of multiple drugs aggravates quality of life even further.
- Patients with severe depression have a higher risk of dying from heart disease and stroke.
- A previous examination of Arab dialysis patients at Nazareth Hospital showed that the prevalence of depression in patients treated with hemodialysis was double in relation to the global rate.

## RESEARCH OBJECTIVES

- To examine whether the type of treatment (PD or HD) yields any differences in terms of quality of life and prevalence of depression among Arab dialysis patients in the Lower and Western Galilee.
- To broaden the understanding of how physiological, psychological and social factors influence quality of life in patients treated with the two treatment types, and how they contribute to the prevalence of depression in each group separately.

## PATIENTS & METHODS

Sample: 61 HD patients and 19 PD patients.

All Arabs from the Lower and Western Galilee region, patients of the Dialysis Institute at the Nazareth Hospital of Nazareth and Nahariya Hospital Dialysis Institute.

The subjects have completed two questionnaires:

1. Beck Depression Inventory (BDI) for measuring the severity of depression
2. Kidney Disease Quality of Life Short Form (KDQOL-SF, Version 1.3).

The questionnaires were previously translated from English into Arabic and Hebrew for clinical use. The replies were processed by statistical methods.
the study addressed the above-titled aims using ten assumptions that examined the differences in various characteristics between the two groups:

| | |
|---|---|
| Hypothesis 1: | The sense of wellbeing is higher in PD patients as compared with HD. |
| Hypothesis 2: | Malnutrition manifestations will be higher in HD patients as compared with PD. |
| Hypothesis 3: | Social support is higher among HD patients compared with PD subjects. |
| Hypothesis 4: | Impaired general capacity is more severe in HD as compared with PD patients. |
| Hypothesis 5: | Creativity and pleasures in life are lower in HD as compared with PD patients. |
| Hypothesis 6: | The severity of pain is more profound in HD that the PD patients. |
| Hypothesis 7: | Sexual function is better in PD as compared with HD patients. |
| Hypothesis 8: | Capacity to work for payment is higher in PD as compared with HD |
| Hypothesis 9: | Depression is higher in HD as compared with PD patients. |
| Hypothesis 10: | Depression and impaired pleasures in life are higher among female patients. |

## RESULTS

**Table 1: Demographic characteristic of the studied HD and PD patients**

| Variable | | HD | n | PD | n | p-value |
|---|---|---|---|---|---|---|
| Gender | Male | 47.5 | 29 | 63.2 | 12 | |
| | Female | 52.5 | 32 | 36.8 | 7 | 0.234 |
| Age | up to 40 | 4.9 | 3 | 21 | 4 | |
| | 40-65 | 47.5 | 29 | 63.2 | 12 | |
| | Over 65 | 47.5 | 29 | 15.1 | 3 | 0.033 |

**Table 2: Clinical characteristic of the studied HD and PD patients**

| Variable | HD | | | PD | | |
|---|---|---|---|---|---|---|
| Years of dialysis | Mean | S.D | n | Mean | S.D | n |
| Number of Medications | 4.66 | 0.46 | 60 | 2.98 | 0.48 | 16 |
| Hospitalization in last year | 9.67 | 0.47 | 49 | 9.82 | 0.95 | 17 |
| Number of Outpatient visits | 3.47 | 1.5 | 49 | 3 | 1.42 | 17 |

**Table 3: Quality of life of the studied HD and PD patients**

| | HD | | | PD | | |
|---|---|---|---|---|---|---|
| Variable | Mean | S.D | n | Mean | S.D | n |
| Symptoms list | 76.89 | 2.97 | 54 | 65.199 | 3.33 | 19 |
| Impact of health status on daily function | 63.98 | 2.63 | 54 | 67.04 | 4.79 | 19 |
| Impact of renal failure on daily function | 47.26 | 3.58 | 54 | 41.12 | 4.93 | 19 |
| Function at work | 11.76 | 4.34 | 51 | 26.32 | 5.88 | 19 |
| Cognitive function | 74.57 | 2.91 | 54 | 71.58 | 4.85 | 19 |
| Social involvement | 73.46 | 2.51 | 54 | 72.63 | 4.7 | 19 |
| Sexual function | 54.38 | 6.74 | 20 | 93.75 | 6.52 | 4 |
| Sleep quality | 55.33 | 1.9 | 53 | 54.08 | 3.91 | 19 |
| Social and familial support | 84.88 | 3.48 | 54 | 78.95 | 8.44 | 19 |
| Encouragement and support by the staff | 91.04 | 1.92 | 53 | 93.42 | 3.22 | 19 |
| Satisfaction from treatment and attitude | 82.72 | 2.64 | 54 | 80.7 | 4.08 | 19 |

**Table 4: Impact of treatment modalities on well being status**

| | HD | | | PD | | |
|---|---|---|---|---|---|---|
| Variable | Mean | S.D | n | Mean | S.D | n |
| Impact on emotional problems and function at work | 49.47 | 4.1 | 55 | 50.32 | 6.7 | 19 |
| Impact of pain on routine activity | 22.88 | 4.51 | 55 | 22.37 | 6.87 | 19 |
| Pain | 57.96 | 3.28 | 54 | 45.69 | 5.81 | 18 |
| Well-being feeling | 42.82 | 2.82 | 55 | 40.79 | 4.21 | 19 |
| Emotional welfare | 65.64 | 3 | 53 | 67.02 | 3.8 | 19 |
| Impact of Emotional problems on daily function | 53.7 | 6.13 | 53 | 18 | 10.63 | 18 |
| Emotional ability for social incorporation | 54 | 3.02 | 51.39 | 19 | 6.49 | 46.05 |
| Energy/Fatigue | 53 | 3.05 | 48.93 | 19 | 3.27 | 45.88 |

**Table 5: Correlation between gender and social status and depression among HD patients.**

| | Number of patient | | | Number of patient | | |
|---|---|---|---|---|---|---|
| Depressed | n | % | W/O Depression | n | % | p-value |
| Gender | | | Gender | | | |
| Male | 8 | 30.8 | Male | 21 | 60 | |
| Female | 18 | 69.2 | Female | 14 | 40 | 0.023 |
| Social status | | | Social status | | | |
| Married | 21 | 45.6 | Married | 25 | 55.4 | |
| Widow | 5 | 19.2 | Widow | 6 | 17.1 | |
| Single | 0 | 0 | Single | 4 | 11.4 | 0.203 |
| Etiology ESRD | | | Etiology ESRD | | | |
| Diabetes mellitus | 19 | 73.1 | Diabetes mellitus | 20 | 57.1 | |
| Hypertension | 4 | 15.4 | Hypertension | 6 | 17.1 | |
| Nephrolithiasis | 2 | 7.7 | Nephrolithiasis | 7 | 20 | 0.303 |
| Heart failure | 0 | 0 | Heart failure | 2 | 5.7 | |

**Table 6: Correlation between gender and social status and depression among PD patients.**

| | Number of Patients | | | Number of Patients | | |
|---|---|---|---|---|---|---|
| Depressed | n | % | Non-Depressed | n | % | p-value for Chi-square |
| Gender | | | Gender | | | |
| Male | 4 | 57.1 | Male | 10 | 83.3 | |
| Female | 3 | 42.9 | Female | 2 | 16.7 | |
| Social status | | | Social status | | | |
| Married | 5 | 71.4 | Married | 9 | 75 | |
| Widow | 1 | 14.3 | Widow | 2 | 17 | |
| Single | 1 | 14.3 | Single | 1 | 8 | 0.17715 |
| Etiology ESRD | | | Etiology ESRD | | | |
| Diabetes mellitus | 3 | 42.8 | Diabetes mellitus | 6 | 66.7 | |
| Hypertension | 4 | 57.2 | Hypertension | 4 | 33.3 | |
| Nephrolithiasis | 0 | 0 | Nephrolithiasis | 2 | 17 | |
| Heart failure | 0 | 0 | Heart Failure | 0 | 0 | 0.81194 |

**Table 7: Comparison of the prevalence of various hypothesized item (see methods) between HD and PD patients.**

| | PD | | | | | HD | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Hypothesis item | Mean | Min | Max | SD | n | Mean | Max | Min | SD | n | P-value |
| 1 | 48.1 | 48.1 | 76.67 | 3.11 | 19 | 51.2 | 21.88 | 100 | 2.37 | 55 | 0.4859 |
| 2 | 72.81 | 31.21 | 100 | 5.01 | 19 | 69.71 | 0 | 100 | 3.08 | 54 | 0.6071 |
| 3 | 78.95 | 0 | 100 | 8.44 | 19 | 84.88 | 0 | 116.67 | 3.48 | 54 | 0.443 |
| 4 | 28.29 | 0 | 77.5 | 5.31 | 19 | 31.18 | 0 | 100 | 3.53 | 55 | 0.671 |
| 5 | 58.62 | 20.56 | 88.89 | 4.16 | 19 | 58 | 20 | 93.33 | 2.23 | 54 | 0.8903 |
| 6 | 45.69 | 10 | 100 | 5.81 | 18 | 57.96 | 12.5 | 100 | 3.28 | 54 | 0.0669 |
| 7 | 93.75 | 75 | 100 | 6.25 | 4 | 54.38 | 0 | 100 | 6.74 | 20 | 0.019 |
| 8 | 26.32 | 0 | 50 | 5.88 | 19 | 11.76 | 0 | 100 | 4.37 | 51 | 0.0723 |

| Hypothesis Item | HD | % | n | PD | % | n | p-value for Chi-square |
|---|---|---|---|---|---|---|---|
| 9 | Depressed | 42.6 | 26 | Depressed | 38.8 | 7 | |
| | Non-Depressed | 57.4 | 35 | Non-depressed | 63.2 | 12 | 0.777 |
| 10 | Depressed | | | Depressed | | | |
| | Male | 30.8 | 8 | Male | 57.1 | 4 | |
| | Female | 69.2 | 18 | Female | 42.9 | 3 | 0.023 |

## SUMMARY & CONCLUSION

- The findings confirm that quality of life is poor in both HD and PD patients.
- In some of the indices, the condition is slightly better among the HD patients, even in those indices showing mental disturbance. Despite this, the level of depression is higher among HD patients, while the majority of patients suffering of depression are females.
- The differences in quality of life in favor of the PD group are significant for further control and flexibility in daily living, independence, mobility, capacity to work for payment, further education and better nutrition. The study findings did not answer the question of why do so little patients perform peritoneal dialysis.
- The study showed that both physiological and psychological variables influence the quality of life of dialysis patients.
- The physiological variable influences the psychological variable and both together influence the prevalence of depression.
- The study suggests to further examine what aspect of the quality of life of women treated with HD causes them such a severe depression.
- The study recommend that more ESRD patients should begin PD treatment, and to use a broader definition of the diagnosis and treatment of depression in all of them.