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Research Article

Determination of Self-Esteem and The Levels of Depression in Patients Practicing Clean Intermittent Catheterization For Neurogenic Bladder After Spinal Cord Injury

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Summary

Purpose: The purpose of this study was to determine the levels of depressive symptoms and self esteem in patients practicing clean intermittent catheterization for neurogenic bladder caused by spinal cord injury.
Materials and Methods: Thirty-four patients who were on CIC for spinal cord injury, were included in this descriptive, cross-sectional study. The questionnaire prepared by the researchers was used for the determination of the demographic characteristics of the patients. The Beck Depression Inventory (BDI) was used to determine the levels of depressive symptoms and the Coopersmith Self- Esteem Inventory to assess the self-esteem of the patients. Data analysis was conducted using SPSS version 12.0. The obtained data were analyzed using %, x, t and Mann Whitney U test.
Results: In this study, it was found that 55,9% of the patients showed no depressive symptoms, 11,8% low levels of depressive symptoms and 8,8% high levels of depressive symptoms. Additionally 61,8 % of the patients had low self-esteem. There were no statistically significant differences between depressive symptoms and gender, cause of trauma, level of injury, and the duration of catheterization ($p \geq 0.05$); whereas there was a statistically significant difference between the levels of depression and the patient's age, occupational status and ability to perform self-catheterization ($p \leq 0.05$).
Conclusion: The results of this study demonstrated the importance of emotional problems and of psychosocial diagnosis and support in increasing life satisfaction in this group of patients.

Key words: Spinal Cord Injury, Clean Intermittent Catheterization, Depression

Spinal Kord Yaralanması Sonrası Nörojen Mesanede Temiz Aralıklı Kateterizasyon Uygulayan Hastaların Benlik Saygısı ve Depresyon Düzeylerinin Belirlenmesi

Özet

Amaç: Bu çalışma Spinal kord yaralanması sonucu Temiz Aralıklı Kataterizasyon (TAK) uygulayan hastaların depresyon belirti düzeyleri ve benlik saygısını belirlemek amacıyla planlanlandı.
Gereç ve yöntem: Tanımlayıcı, kesitsel tipte yapılan araştırmaya, spinal kord yaralanması olup TAK uygulayan toplam 34 hasta alındı. Hastaların demografik özelliklerini belirlemek amacı ile araştırmacılar tarafından hazırlanan soru formu kullanıldı. Hastaların depresyon düzeyini belirlemek amacı ile Beck Depresyon Ölçeği (BDÖ), Benlik saygılarını

değerlendirmek amacı ile de Coopersmıth Benlik Saygısı Ölçeği kullanıldı. Araştırmadan elde edilen veriler SPSS 12.0 programı ile % ,x ,t ve Mann Whitney U testi ile değerlendirildi.
Bulgular: Araştırmada hastaların % 55 9'u depresif belirti göstermezken; % 11,8'inin düşük, % 23,5'inin orta düzeyde, % 8,8'inin ise yüksek düzeyde depresif belirti gösterdiği belirlendi. Hastaların %61,8' inde ise benlik saygısının düşük olduğu bulundu. Cinsiyet, travma nedeni, yaralanma düzeyi, TAK uygulama süresi ile depresyon belirtileri arasında istatistiksel olarak anlamlı fark bulunmazken ($p \geq 0.05$); hastaların yaşı, çalışma durumu ve temiz aralıklı kateterizasyon uygulamasını kendisinin yapıp yapmamasıyla depresyon düzeyleri arasında istatistiksel olarak anlamlı fark bulundu ($p \leq 0.05$).
Sonuç: Çalışmanın sonuçları, bu grup hastalarda emosyonel sorunların önemli olduğunu, hastaların yaşam doyumlarını artırmada psikososyal tanılama ve desteğin önemimi ortaya koymaktadır.

Anahtar Kelimeler: Spinal kord yaralanması, Temiz Aralıklı Kateterizasyon, Depresyon

INTRODUCTION

Spinal cord injury is not only a devastating physical injury but also has a profound effect on the social and psychological well-being of an individual. Patients require management for many medical problems. The urinary care will be involved in managing the neurogenic bladder (NB), attempting to preserve renal function and continence[18]. Patients with neurogenic bladder are at risk for many complications, including urinary tract infection, urinary incontinence and deterioration of the upper urinary tracts with potential loss of renal function. Before the development of modern methods of bladder management, renal failure secondary to NB was the most common cause of death in these patients. Thus, management of the lower urinary tract is crucially important in patients with NB to prevent damage to the upper tract and, thus, preserve renal function. The goal of management is to allow the bladder to store a reasonable volume of urine at low pressure and empty it at appropriate intervals. Over the past 30 years, clean intermittent catheterization (CIC) has been used for the management of these patients. With intermittent catheterization, individuals are able to empty the bladder on a regular basis with a low urinary tract infection rate and good continence between catheterizations[6,15]. The introduction of clean intermittent catheterization (CIC) has reduced the morbidity and mortality in these patients. This procedure has other beneficial effects, such as improved body image and self-esteem, and guarantees a good quality of life (QOL). Nevertheless, it is true that patients with spinal cord injury (SCI) experience physical and emotional difficulties in their daily lives, even when emptying problems are properly managed[6,16].

Management of NB requires a multidisciplinary or interdisciplinary approach. Patients with NB often suffer from psychological problems. Perhaps the greatest potential adverse emotional consequence of NB is depression[13,14]. Kennedy and Rogers examined the prevalence of anxiety and depression longitudinally in patients with spinal cord injury (SCI). Their results illustrated the highest scores in the acute phase of injury and it highlighted the need for interventions to prevent and treat psychological disorders during this period. However, even after the patient is stable, attention should be paid to the psychological aspect of management because SCI often results in long-term physical and emotional disabilities[10,15]. When the patient is stable, individual is able to perform activities of daily life. Thus, performing quality of life assessment after acute state will provide the most useful information regarding permanent physical and emotional disabilities[1,9]. Unfortunately, we know little about the

association between depressive symptoms in neurogenic patients after acute state. This study was planned to determine the relationship between self-esteem and the levels of depressive symptoms in patients who were on clean intermittent catheterization for neurogenic bladder caused by spinal cord injury.

MATERIAL AND METHODS

Type of Study: Thirty-four patients practicing CIC for spinal cord injury, were included in this descriptive, cross-sectional study.

Place and Duration of Study: The data were collected through personal interview between November 2010 and February 2011. This study was conducted on patients who participated in the activities of Turkish Spinal Cord Injury Association in İstanbul and who were willing to take part in the study. An informed consent form was obtained from each patient.

Study inclusion criteria were: age 18 years or older, good visual acuity, the ability to communicate, and understand and comply with the study requirements. Exclusion criteria were patients in a confused state, those who cannot read the questionnaire, or those who fail to give consent. In cases with an incomplete workup or incomplete information, the results of the survey were also excluded from the final analysis.

Data Collection Tools: The questionnaire prepared by the researchers was used for the determination of the demographic characteristics of the patients. The Beck Depression Inventory (BDI) was used to determine the levels of depressive symptoms and the Coopersmith Self-Esteem Inventory to assess the self-esteem of the patients. The Beck Depression Inventory, which consists of 21 items, was used to assess the risk of depression and to evaluate the level and severity change of depressive symptoms. Individual items assessed on the BDI include sadness, pessimism, sense of failure, dissatisfaction, guilt, punishment, dislike of self, self-accusation, suicidal ideation, crying, agitation, social withdrawal, indecisiveness, body image, loss of appetite, fatigability, insomnia, retardation, loss of weight, somatic preoccupation, and low level of energy. Each of the 21 items is scored from 0 to 3.

The Self-Esteem Inventory developed by Coopersmith consists of 25 items which include self-esteem factors such as self-derogation, leadership-popularity, family-parents and assertiveness-anxiety. In this study, general self-esteem scores, not the sub-factors, measured by the scale were taken into account.

Evaluation of Data: Data analysis was conducted using SPSS version 12.0. The obtained data were analyzed using %, x, t and t tests. The survey responses were coded and analyzed using descriptive statistics, which are reported as the means and standard errors or numbers (%). We calculated frequency distributions for categorical variables. The Mann Whitney U test and Kruskall Wallis test were used to assess the relationship between independent variables and BDI.

RESULTS

In this study, the mean age of the patients was 34 years. Of all patients, 55.9 % were male, 61.8 % (n:21) were unemployed, 38.2 % (n:13) were traumatized, 64.7 % (n:22) had injuries at T7-T12, 67.6 % (n:23) were provided training and information about CIC by nurses, 29.4 % (n:10) had been on CIC for at least six months and 64.7 % (n:22) reported that their sexual activity was adversely affected by CIC (Table 1).

Table 1: The Characteristics of the Patients

Variables	Number(n=34)	%	Median	Range
Age			37,00	25-65
≤37	20	58,8		
>37	14	41,2		
Gender				
Female	15	44,1		
Male	19	55,9		
Occupational status				
Employed	13	38,2		
Unemployed	21	61,8		
Cause of trauma				
Accident	13	38,2		
Fall	9	26,5		
Injury	2	5,9		
Sport	2	5,9		
Other	8	23,5		
Level of injury				
C1-C4	2	5,9		
C5-C6	2	5,9		
T1-T6	3	8,8		
T7-T12	22	64,7		
L1-L3	5	14,7		
Instructor				
Physician	8	23,5		
Nurse	23	67,7		
Physiotherapist	3	8,8		
Duration of catheterization				
6 months	10	29,4		
1 year	2	5,9		
2 years	2	5,9		
3 years	2	5,9		
4 years	3	8,8		
5 years	6	17,6		
>5	9	26,5		
Was there any adverse effects on sexual activity?				
Yes	22	64,7		
No	8	23,5		
Sometimes	4	11,8		
The frequency of catheterization				
3 hours	4	11,8		
4 hours	16	47,1		
6 hours	6	17,6		

Irregular	8	23,5
By whom is the catheterization performed?		
Self-catheterization (himself/herself)	23	67,6
Caregiver	11	32,4

Table 2. Shows the mean BDI scores of the patients who participated in this study. As shown in Table 2; the mean BDI score was 13.85 ± 9.88 whereas the mean score on the Self- Esteem Inventory was 45.41± 12.41.

According to the Beck Depression Inventory, 55.9 % (n:19) of the patients had no symptoms of depression; whereas based on the Coopersmith Self-Esteem Inventory, the majority of the patients had low self-esteem (Table 3).

The comparison between the Beck Depression Inventory scores of the patients and some variables revealed that unemployed patients (r:2.692, p:0.011) with ages of ≤ 37 years (r:0.417, p:0.014) had higher levels of depression and there was no significant relationship between the BDI scores and the other independent variables. No statistically significant differences were found between the BDI scores and level of injury (Z:-0,794, p:0.427), the frequency of catheterization (Kruskal Wallis: 3.470, p:0.248), the duration of catheterization (Kruskal Wallis: 2.785, p:0.248). The patients dependent on caregivers had significantly higher depression scores than those performing self-catheterization (Z:-2.524, p: 0.012). The mean scores of the patients who reported that their sexual life was adversely affected by CIC were found to be high, which however did not reach statistical significance (Table 4).

Table 2. The Mean Scores on the Beck Depression Inventory and the Self-Esteem Inventory (n:34)

Inventory	**Mean**	**SD**	**Min**	**Max**
The Beck Depression Inventory	13,85	9,88	0,00	34,00
The Self- Esteem Inventory	45,41	12,41	0,00	68,00

Table 3. Profiles of the Patients According to the Beck Depression Inventory and the Self- Esteem Inventory (n:34)

The Beck Depression Inventory			
Score		**n**	**%**
0-13	None	19,00	55,9
14-19	Low	4,00	11,8
20-28	Normal	8,00	23,5
29-64	High	3,00	8,8
The Self- Esteem Inventory			
Score		**n**	**%**
≤50	Low	21,00	61,8
>50	High	13,00	38,2

Table 4. The Relationship Between the Beck Depression Inventory Scores and Some Variables

		BDI	
Statements	**n=34**	**Mean**	**SD**
Age			
≤37	20	10,65	7,93
>37	14	18,43	10,84
Pearson Correlation (r)		**0,417**	
p		**0,014***	
Gender			
Female	15	12,33	9,24
Male	19	15,05	10,44
Mann-Whitney U(Z)Test		-0,729	
p		0,466	
Occupational Status			
Employed	13	8,54	7,72
Unemployed	21	17,14	9,77
Mann-Whitney U(Z)Test		**-2,572**	
p		**0,010***	
Level of injury			
T7-T12	22	14,68	9,41
Other	12	12,33	10,94
Mann-Whitney U(Z)Test		-0,794	
p		0,427	
Instructor**			
Physician	8	10,25	7,30
Nurse	23	14,26	10,46
Mann-Whitney U(Z) Test		-0,814	
p		0,416	
The duration of catheterization			
6 months	10	16,60	12,29
1-5 years	15	15,00	9,47
Over 5 years	9	8,89	5,99
Kruskal-Wallis Test		2,785	
p		0,248	
Was there any effect on sexual activity?**			
Yes	22	16,73	10,37
No	8	8,38	5,34
Mann-Whitney U(Z) Test		-1,855	
p		0,064	
The frequency of catheterization			
3-4 hours	20	11,85	9,76
6 hours	6	13,00	8,29
Irregular	8	19,50	10,18
Kruskal-Wallis Test		3,470	

p		0,176	
By whom is the catheterization performed?			
Self-catheterization (Himself/herself)	23	10,70	8,68
Caregiver	11	20,45	9,23
Mann-Whitney U(Z) Test		-2,524	
p		**0,012***	

***p<0,05**
****Less than 5 people were excluded from analysis

DISCUSSION

Patients with spinal cord injury have downward tendency in social environment-job fit and the hopes for future. In these situations, patients have the risk of psychiatric disorders especially like depression, anxiety. To increase their adaptation to social life and regularize their treatment; their depression levels and the factors which influence self-esteem, should be known and therapeutic approaches should be used. Although estimated prevalence of depression after SCI is quite variable from study to study, depending on the type of measure, the definition of depression, and whether the taken during rehabilitation, shortly after, or some what later, depressive disorders are the most common form of psychologic distress in SCI and appear to be more common than in the nondisabled population[3,7,10,14,15,17].

In this study, 11, 8 % of the patients practicing clean intermittent catheterization for spinal cord injury had low levels of depressive symptoms, 23,5% moderate levels of depressive symptoms and 8,8% had high levels of depressive symptoms, which suggest that this group of patients experiences difficulties in overcoming problems associated with CIC and can not tolerate the changes in their life-style. In their study, Kessler et al suggested that although CIC offered more advantages than other techniques it affected the quality of life of patients[11]. A study by Oh reported that patients who were on CIC showed more depressive symptoms than normal population[15]. A study by Demirel et al reported that 52% of patients had anxiety, and 61% had depression after spinal cord injury[4]. Hancock et al concluded that 25% of patients with spinal cord injury had depression[8]. The findings obtained in this study are consistent with those obtained in the above mentioned studies.

There is mixed evidence for a relation between depressive symptoms and demographics or injury characteristics. In this study, there was no statistically significant relationship between the BDI and other demographic data except age, occupational status and those performing self-catheterization. With regard to aging, several studies of multiple components (chronologic age, age at injury onset and time since injury) have found limited relationship between these aging component and general psychosocial outcomes. These studies have generally found chronologic age and age at injury onset to be negatively correlated with psychological outcomes. For instance, chronologic age was negatively correlated with general life satisfaction and life adjustment, whereas the number of years since SCI onset was positively correlated with the same outcomes. Other researchers found that the poorest psychological outcomes were associated with greater age[3,7].

In the present study, the depression scores were found to be statistically significantly lower in the patients performing self-

catheterization independently, which can be associated with self-satisfaction, increased self-esteem as a result of self-sufficiency and thus, lower levels of depressive symptoms. In a study by Yıldız et al, it was suggested that patients who were able to perform self-catheterization showed a better adaptation compared to others[19]. Similar results were obtained in the study by Duffin. These findings are also supportive of those obtained in this study[5].

Tate et al found that persons with higher self-report depression scores had greater use of paid personal care attendants than those with lower levels of depression. An interesting finding was an influence of patient's ability to perform self-catheterization on depressive symptoms, with poorer outcomes observed among patients who were unable to perform catheterization independently. This finding represents that functional status of patients may influence patients' depressive symptoms[17]. In this study, low levels of depressive symptoms in the employed group can be interpreted as that being employed increases self-fulfillment and self-sufficiency, thus decreasing depressive symptoms. In addition, the patients who reported that their sexual activity was adversely affected by CIC had higher levels of depressive symptoms. A study by Benevento and Sipski reported that sexual activity was affected in this group of patients[2]; a study by Ku et al suggested that sexual activity was poor in this group of patients, and particularly male patients had erectile dysfunction and that sexual dysfunction negatively affected the psychosocial adjustment of the patients, which support the results of this study[12]. In conclusion, it can be said that psychiatric assessment following spinal cord injury and therapeutic interventions in patients with clinically diagnosed depression would increase the potential for rehabilitation in these patients.

CONCLUSION

As a result of this study, it was found that the majority of the patients in the sample group had low self-esteem. It was also observed that young patients with spinal cord injury had decreased social and occupational adjustment and loss of future hopes. In these patients who are known to be at risk for psychiatric disorders, particularly depression and anxiety, recognition of the levels of depression and awareness of the factors that affect self-esteem and the use of appropriate therapeutic approaches are of great significance in improving patients' adjustment to treatment and social life.

Comprehensive care of patients on CIC for NB is one of the greatest clinical challenges in healthcare. Our study provides some descriptive information about this understudied population. In this study, we found that the patients had low and moderate levels of depressive symptoms.

Limitations of the Study

The limitations of the study include the small number of samples and long questions. The small number of samples, the difficulty to reach this group of patients and the unwillingness of patients to participate in the study are other limitations of this study. Another limitation of our study is inability to generalize the findings because the study was conducted on a specific group of patients. Future studies should be conducted in different institutions since we were able to reach only a specific group of patients.

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