Depression in children with hemophilic arthropathy and poliomyelitis: a preliminary report

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The aim of this study was to evaluate children with chronic disorders like hemophilia and poliomyelitis from the psychological perspective, to determine the frequency of depression, to identify the risk factors and to investigate the relation between disability and depression. Thirty-five patients with disability due to poliomyelitis and 12 patients with hemophilic arthropathy were included in the study. Thirty-six healthy children from the district schools served as controls. The Children's Depression Inventory (CDI) was used to assess the extent of depression. For the hemophilia group, joint scores proposed by the World Federation of Hemophilia were used to assess the degree of joint involvement. The pliomyelitis group was evaluated according to the level of ambulation and the need for orthoses. The CDI score was 10.57 ± 5.87 in the poliomyelitis group, 11.00 ± 5.64 in the hemophilic arthropathy group and 8.39 ± 3.78 in the control group, but the difference was not statistically significant. Four of 35 patients with poliomyelitis (11.4%) and two of 12 hemophilic arthropathy patients (16%) exhibitea depression. None of the children in the control group had depression. Since depression interferes with both medical compliance and rehabilitation potential, early diagnosis and treatment is important. Therefore, evaluation of the pyschological status of chronically ill children must be a part of the rehabilitation program.

Key words: depression, hemophilia, poliomyelitis.

Psychosocial states play an important role in the outcome of chronic diseases. Therefore, during the past decade, psychiatric disturbances chronically ill people, especially depression, has been the focus of concern[1,2].

Depression is highly prevalent in adults with a chronic or disabling disease; however, people tend to overlook the psychological status of sick children. Chronic medical problems promote a state of anxiety and depression in children. There are various methods to assess the depressive symptoms in children. The Children's Depression Inventory (CDI) is the most common self-report inventory used to determine childhood depression. Several studies in literature have shown that CDI is a reliable method[3].

Depressive symptoms have been widely studied in postpoliomyelitis patients; however, psychosocial disturbances and adaptation mechanisms to initial losses in young acute paralytic polio survivors are subtle[4]. Reports on the psychosocial effects of hemophilia are conflicting. While early papers report severe adjustment problems[5,6], more recent ones report no difference between children with hemophilia and the general population[7].

In this study we aimed to describe the prevalence of depression among children with hemophilic arthropathy and poliomyelitis. The demographic characteristics of depressed and nondepressed subjects, the extent of arthropathy in the hemophilic arthropathy group and the level of ambulation and need for orthoses in the poliomyelitis group were also investigated.

Material and Methods

Thirty-five children with disability due to poliomyelitis and 12 children with hemophilic

arthropathy who were followed by the Department of Physical Medicine and Rehabilitation were included in the study. Thirty-six healthy children identical in age, social class, birth order and family size comprised the control group.

All subjects were interviewed and examined by the same physician. For the hemophilia group, each patient was assessed by scores proposed by the World Federation of Hemophilia including joint scores, pain scores, bleeding scores[8] and Pettersson's radiological score[9,10]. For the poliomyelitis group, patients were evaluated for muscle strength, level of ambulation and the need for orthosis. The Children's Depression Inventory was administered to assess depression. CDI is a self-report questionnaire which has been proven valid and reliable in the Turkish pediatric population[11]. It includes 27 items, each rated on a 0-2 point scale, and reflects the cognitive, affective and behavioral symptoms of depression. Each item is expressed in three alternate statements and the subject is asked to choose the one that best describes the way he or she has been feeling during the preceding two weeks[3,12].

For statistical analysis, Student's t-test, Pearson's correlation matrix, one way ANOVA and chi-square tests were used.

Results

The mean ages of children with hemophilia and poliomyelitis were 10.75 ± 1.42 and 10.57 ± 5.87 years, respectively. In the hemophilia group, all 12 children were male, while in the poliomyelitis group 22 patients were male and 13 female. Thirty male and 6 female healthy children, with a mean age of 11.01 ± 1.56 years, comprised the control group. The mean durations of the disease for the poliomyelitis and hemophilic arthropathy patients were 9.54 and 9.83 years, respectively (Table I).

The mean CDI scores were 11.0 ± 5.36 and 10.57 ± 5.87 for the hemophilia and poliomyelitis groups, respectively (Table II). These scores were higher than the mean CDI score of the control group (8.39 ± 3.78), but the difference was not statistically significant for either group ($p > 0.05$). The cut-off score for CDI was 19. Four of 35 patients with poliomyelitis (11.4%) and two of those with hemophilic arthropathy (16%) had CDI joint scores greater than 19. Depression in the hemophilic arthropathy and poliomyelitis patients was more frequent than in the healthy control group ($p < 0.05$). No correlation was found between CDI scores and the duration of the disease for either group ($p > 0.05$). Table III shows the mean joint scores of the hemophilic patients. No correlationn was found between the joint scores and the CDI scores for the hemophilic patients. Among 35 poliomyelitis patients, 10 were wearing orthopedic shoes, 13 were using a short leg walking brace and 12 were using a long leg walking brace. Thirty-three of 35 patients were independent in ambulation and two were dependent. When CDI scores of these patients were compared with respect to the need for orthosis, CDI scores of the patients using a long leg walking brace were higher than those of patients who were using a short leg walking brace or wearing orthopedic shoes ($p < 0.05$).

Table I. Mean Age, Sex Ratio and Mean Duration of Disease in the Patient and Control Groups

	Hemophilia group (n = 12)	Poliomyelitis group (n = 35)	Control group (n = 36)
Age (year)	10.75±1.42	10.57±5.87	11.01±1.56
Male/female	12/0	22/13	30/6
Duration of disease (year)	9.83	9.54	

Table II. Children's Depression Inventory (CDI) Scores of Poliomyelitis, Hemophilia and Control Groups

	Hemophilia group	Poliomyelitis group	Control group	p value
CDI scores	11.00±5.36	10.57±5.87	8.39±3.78	> 0.05

Table III. Assessment of the Joints Using Joint Scores in Hemophilic Arthropathy Patients

	Mean	Standard deviation	Min.	Max.	Range
Physical examination	5.08	1.83	1	8	0-12
Pain	0.92	1.08	0	3	0-3
Bleeding	3.00	0.00	3	3	0-3
Pettersson score	5.83	3.30	1	10	0-13

Discussion

Although work in the field of childhood depression is relatively new, a considerable amount of knowledge has already accumulated in the literature. Differences involving depression in children and in adults have been found. Data for adults indicate that depression is more prevalent in women than in men, whereas studies involving prepubertal children have not revealed consistent sex differences in

the prevalence of major depression.Some of the serious concomitants of depression, such as suicide, are less evident in children[13].

Children with chronic health conditions have long been considered at substantial risk for psychosocial morbidity, especially depression. There are a wide variety of reasons to expect an increased risk of depression among these children. First, many chronic health impairments are associated with chronic or recurrent episodes of pain or with an acutely diminished or altered physiological function, which may promote the state of anxiety and depression. Also, the peresence of a chronic condition may limit or alter social interactions[1].

The Children's Depression Inventory (CDI) is the most common self-report inventory used for determining childhood depression. It is essentially a downward extension of the Beck Depression Inventory[13]. Several additional items are included that attempt to assess areas of school and social/peer relations[14]. In literature, several reports exist about the normative and reliability data of the CDI[15-17]. In a study carried out on 432 Turkish children, the CDI was found to be highly reliable and valid[11].

There are conflicting data about the psyschosocial effects of hemophilia. In literature, there are some reports about adjustment problems and poor social functioning in hemophilic patients[5,6]. However, others reported little or no difference between the hemophilic children and the normal population with respect to social adjustment and personality[7]. More recent studies focused on the impact of HIV infection on the psyschological status of hemophilic patients. Logan et al.[18] reported that children with hemophilia were no more disturbed psychologically than their diabetic or healthy peers, despite the identification of HIV infection. In another study among adolescents with hemophilia, the mean scores for anxiety and depression inventories did not differ significantly from those of the reference group[19]. However, another study showed higher depressive scores in HIV (+) adult hemophilic men compared to HIV (-) patients[20].

In our study, the mean CDI scores of the children with hemophilia were greater than those of the control group. However, this difference was not statistically significant. Also, no correlation was found between CDI scores and the joint scores of the hemophilic patients.

Depression associated with postpoliomyelitis syndrome has been widely studied in the literature. Most of the patients successfully adapt to their initial losses from acute polio, but later, newly developing disabilities are accompanied by stress, depression and anxiety. Tate et al.[4] reported elevated distress and depression in patients with postpoliomyelitis syndrome. In their study, it was shown that depressed patients experienced more accentuated physical deterioration, had a higher number of somatic complaints and reported a greater increase in pain. In another study, postpolio patients had more depressive symptoms than the control group; however, scores in activities of daily living were not related to depression. Rather, work, leisure, recreation, socialization and community interactions are the factors that mostly contributed to depression[21]. Berlly et al.[22] reported mild-to-moderate depressive symptoms in 27 percent of the postpolio group and in none of the controls.

Although acute poliomyelitis has been eradicated in most of the developed countries, it is still an important cause of disability in underdeveloped countries. However, very few studies have been conducted about depression in acute poliomyelitis patients. In our study, we found that children with poliomyelitis had higher CDI scores than the control group, but the difference was not statistically significant. When CDI scores of these patients were compared with respect to the need for orthosis, CDI scores of the patients that were using a long leg walking brace were significantly higher compared to those who were using a short leg walking brace. This result suggests a correlation between the severity of the disability and the deegree of depression.

Since depression in a child with a chronic illness is an important handicap for the rehabilitation process, depressive symptoms must be recognized and treated immediately.

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