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## Original article

**Health related quality of life in Turkish polio survivors: impact of post-polio on the health related quality of life in terms of functional status, severity of pain, fatigue, and social, and emotional functioning<sup>☆</sup>**Yesim Garip<sup>a,\*</sup>, Filiz Eser<sup>b</sup>, Hatice Bodur<sup>b</sup>, Bedriye Baskan<sup>b</sup>, Filiz Sivas<sup>b</sup>, Ozlem Yilmaz<sup>b</sup><sup>a</sup> Department of Physical Medicine and Rehabilitation, Ankara Basak Medical Center, Ankara, Turkey<sup>b</sup> Department of Physical Medicine and Rehabilitation, Ankara Numune Training and Research Hospital, Ankara, Turkey

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## ABSTRACT

**Objective:** To determine the impact of postpolio-syndrome on quality of life in polio survivors.

**Methods:** Forty polio survivors were included in the study. Twenty-one patients fulfilling the Halstead's postpolio-syndrome criteria participated in postpolio-syndrome group. The remaining nineteen patients formed non-postpolio-syndrome group. Control group was composed of forty healthy subjects. Quality of life was evaluated by Nottingham Health Profile, depression by Beck Depression Scale and fatigue by Fatigue Symptom Inventory. Isometric muscle strength was measured by manual muscle testing.

**Results:** Total manual muscle testing score was  $26.19 \pm 13.24$  (median: 29) in postpolio-syndrome group and  $30.08 \pm 8.9$  (median: 32) in non-postpolio-syndrome group. Total manual muscle testing scores of non-postpolio-syndrome group were significantly higher than that of postpolio-syndrome group. Patients with postpolio-syndrome reported significantly higher levels of fatigue and reduced quality of life in terms of physical mobility, pain and energy when compared with patients without postpolio-syndrome and control group. It was not reported a statistically significant difference in social and emotional functioning and sleep quality between postpolio-syndrome, non-postpolio-syndrome and control groups. Also it was not found any statistically significant difference in Beck Depression Scale scores among the groups.

<sup>☆</sup> This study originated from the Department of Physical Medicine and Rehabilitation, Ankara Numune Training and Research Hospital, Ankara, Turkey.

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**Conclusions:** Postpolio-syndrome has a negative impact on quality of life in terms of functional status, severity of pain and energy. The identification, early recognition and rehabilitation of postpolio-syndrome patients may result in an improvement in their quality of life.

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## Qualidade de vida relacionada com a saúde em sobreviventes turcos da pólio: impacto pós-pólio na saúde relacionada com a qualidade de vida em termos de estado funcional, gravidade da dor, fadiga e funcionamento social e emocional

### R E S U M O

#### Palavras-chave:

Síndrome pós-pólio

Qualidade de vida

Fadiga

Reabilitação

**Objetivo:** Determinar o impacto da síndrome pós-pólio na qualidade de vida nos sobreviventes da pólio.

**Métodos:** Quarenta sobreviventes da pólio foram incluídos no estudo. Participaram do grupo de síndrome pós-pólio 21 pacientes que atenderam aos critérios de síndrome pós-pólio de Halstead. Os 19 restantes formaram o grupo não síndrome pós-pólio. O grupo controle foi composto por 40 indivíduos saudáveis. A qualidade de vida foi avaliada pelo Nottingham Health Profile, a depressão pela Escala de Depressão de Beck e a fadiga pelo Inventário de Sintomas de Fadiga. A força muscular isométrica foi medida por teste muscular manual.

**Resultados:** O escore total do teste muscular manual foi  $26,19 \pm 13,24$  (mediana: 29) no grupo de síndrome pós-pólio e  $30,08 \pm 8,9$  (mediana: 32) no grupo não síndrome pós-pólio. Escores totais de teste muscular manual de grupo não síndrome pós-pólio foram significativamente maiores do que os do grupo de síndrome pós-pólio. Os pacientes com síndrome pós-pólio relataram níveis significativamente maiores de fadiga e qualidade de vida reduzida em termos de mobilidade física, dor e energia quando comparados com pacientes sem síndrome pós-pólio e grupo controle. Não se relatou uma diferença estatisticamente significativa no funcionamento social e emocional e na qualidade do sono entre grupos de síndrome pós-pólio, não síndrome pós-pólio e controle. Além disso, não se encontrou diferença estatisticamente significativa nos escores da Escala de Depressão de Beck entre os grupos.

**Conclusões:** A síndrome pós-pólio tem um impacto negativo na qualidade de vida em termos de estado funcional, gravidade da dor e energia. A identificação, o reconhecimento precoce e a reabilitação dos pacientes com síndrome pós-pólio podem resultar em uma melhoria da qualidade de vida.

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## Introduction

Postpolio-syndrome (PPS) is a neurologic disorder characterized by a collection of late manifestations occurring many years after the initial poliomyelitis infection. New or increased muscle weakness is the hallmark. The other clinical features are fatigue, pain in joints, bones and muscles, cold intolerance and bulbar symptoms (swallow, speech, respiratory symptoms). Fatigue has been described as the most common symptom. PPS symptoms affect the ability to perform the activities of daily living, mobility, upper limb function, and respiratory capacity. PPS has a negative effect on quality of life (QoL).<sup>1-3</sup>

The present study aimed to investigate QoL in polio survivors in Turkey, to assess the impact of PPS on various QoL domains in terms of functional status, severity of pain, social and emotional functioning.

## Material and methods

The study included a total of 40 polio survivors (21 men, 19 women) who were followed at the outpatient clinic of physical medicine and rehabilitation department of a training and research Hospital which is a major referral center under Ministry of Health, located in Ankara, capital city of Turkey, between December 2012 and September 2013. Study was conducted in accordance with the principles set forth in the Helsinki Declaration 2008.

67.5% of polio survivors (21 patients) fulfilling the Halstead's PPS criteria<sup>4</sup> participated in PPS group, and the remaining 19 polio survivors without PPS formed non-PPS group. Halstead's PPS criteria are: (1) a confirmed history of acute poliomyelitis affecting lower limbs; (2) partial or complete neurological and functional recovery after acute poliomyelitis; (3) new symptoms (extensive fatigue, muscle

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