

MEDICAL, PSYCHOLOGICAL AND ETHICAL ASPECTS OF PROLONGED HUNGER STRIKE: CONSEQUENCES AND FOLLOW-UP OF THE EXPERIENCE IN TURKEY, 2000-2003

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ABSTRACT

In the year 2000, Turkey faced many hunger strikes in the prisons. The reason was launching new F-type type prisons which were designed with high-security facilities and isolation cells. Thousands of prisoners went on prolonged hunger strikes to protest the introduction of these new F-type prisons. Duration of hunger strike periods was up to 300 days or more. Because of these hunger strikes, 112 people died, and hundreds of people lost their health and became disabled.

As a result of the hunger strike actions, diverse number of health problems has arisen. Duration of the action, the way the action ended (forced or willingly), the amount of food and beverages taken during the hunger strike and the individual characteristics of the striker had particular effects on the type and severity of the health problem occurred. Wernicke's Encephalopathy, Wernicke-Korsakoff Syndrome, nutritional peripheral polyneuropathy, common and proximal muscle weakness, severe or temporary amnesia conditions, disartry, spasticity, hand tremors, vertigo, deep sense disorders, digestive system diseases, posture problems and muscle and joint related pain are some of these health problems. Among these clinical pictures, the Wernicke's Encephalopathy and Wernicke-Korsakoff Syndrome are known as the ones which develop due to a decrease in the Thiamin (vitamin B1) supply. Other clinical pictures mentioned are mostly related to malnutrition or to a lack of essential nutrients, primarily proteins, fatty acids and other vitamins. Also PTSD, depression and other psychiatric pictures were to be occurred. These medical and psychological conditions need intense and long term care and follow-ups.

HRFT currently offers medical and psychiatric treatment, physical therapy and rehabilitation to 614 hunger strike survivors. 563 of such consist of hunger strikers who admitted to HRFT subsequent to the hunger strike actions made in the year 2000 and later. Most of the admissions were made in the years 2001 and 2002 (in 2001, 338; in 2002, 185; in 2003, 40 admissions). 51 of the total admissions were made as a result of the similar hunger strike actions made prior to the year 2000 (such as the hunger strikes made in 1996 and before).

In this paper, we present some detailed medical and psychological consequences of this specific period of hunger strike actions. Also ethical aspects of hunger strikes in the light of the experience by the Human Rights Foundation of Turkey and Turkish Medical Association are to be discussed.

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INTRODUCTION

From October 2000 to the end of 2002, Turkey faced massive hunger strike actions in prisons. This was the last, longest and largest hunger strike action in the world. These actions were widespread, because they occurred in almost all the prisons where political prisoners were held, and some two thousand prisoners participated. These actions had fatal outcomes due to hunger and its somatic and neurological results, ending up in a death toll of 46 prisoners in prisons, and another 13 after they were released. These actions had caused serious morbidity, with a large spectrum of diseases from cachexia to Wernicke-Korsakoff Syndrome. Many participants were disabled, even if they did not die. Many of them needed long-term medical care. The political reactions and results in the society were serious and devastating as well.

The reason for the actions was the government's decision to launch new F-type prisons which were designed with isolation cells and high-security facilities. At first, hundreds of prisoners started hunger strikes to protest the introduction of these new F-type prisons. Then the government took action and started an operation against these prisons within the first weeks of their hunger strikes. Most of the political prisoners were deported to the new F-type prisons and hunger strikes continued in these F-type prisons for a long time.

The medical community was affected by these actions from medical, scientific, and ethical aspects. The hunger strikes lasted longer than previously recorded, that is to say there were many people who fast for more than 100, or even 200 days. Surprisingly, some prisoners could continue hunger strike for more than 300 days. Medical approach to these very long-lasting hunger strikes was not known and there was no clear algorithm for treatment and rehabilitation process. The ethical dilemma was also complicated. Since doctors were the only ones to be able to do so professionally, there was huge pressure on the medical community to intervene and stop the actions. But this created a great human rights question.

Human Rights Foundation of Turkey was the main institution in Turkey that undertook the treatment and rehabilitation of hunger strike survivors who were discharged from the prisons. Hundreds of hunger strike survivors applied to HRFT for medical care. HRFT delivered medical care and rehabilitation service to the strikers for years.

Here, I will present the health outcomes and medical aspects of hunger strike actions in prisons of Turkey between 2000 and 2002, using the data collected by Human Rights Foundation of Turkey Treatment and Rehabilitation Centers. Data are limited to the applicants of our centers. Facts and figures about the hunger strike actions and some ethical aspects for the medical community facing these actions will also be discussed.

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FACTS AND FIGURES

Hunger strike actions were launched on 20th October 2000 in several prisons at the same time. More than 800 prisoners started this initial action. The only participants were the political prisoners, who were told that they would be deported from the classical dorm-type prisons to the new F-type prisons. After the first round of negotiations between the government officials and prisoners, some affluent persons from NGO's, medical associations, and democratic organizations intervened to mediate between the parties, but all the negotiations failed. On 19th December 2000, government security forces started an operation in all the prisons where actions were being held. 32 people died and many were injured during these simultaneous, 3-day-long prison operations. Soon after the operations ended, most of the political prisoners, including the hunger strikers were deported to F-type prisons.

Hunger strike actions became even more widespread in the F-type prisons. Approximately two thousand people were estimated to have taken part in these actions. Activists categorized the actions into two: The first group of hunger strikers that were called "death fast activists" continued the hunger strike, usually without a break, and for longer periods. The second group was called "supporter hunger strikers," which went on strike intermittently and in rotation. Yet, some supporters decided to become death fast activist later on. In fact, "death fast" meant the willingness to continue to the hunger strike until their requests were accepted, that is until death if need be. The "supporting strikers", however, didn't aim to continue with the action till they died, and their action were limited with time.

Starting with 20th October 2000, many people joined the actions at different times, sometimes as a group, sometimes individually. At the end of May 2001, almost 7 months after the actions started, the government started to release some of the hunger strikers on the basis of Article 399 of the Code of Criminal Procedure (CMUK). Legal ground was to suspend the jail sentence for six months due to health reasons. By the end of 2002, the mass actions ended. Many hunger strike survivors had been released according to article 399, or due to normal reasons, such as the end of the sentence term, and the court decision. 46 people died due to hunger strike in the prisons, 13 others died due to hunger strike outside of prisons as they continued after they were released. Some people who ended the strike, but were not released, were seriously ill. Although the mass actions faded through the end of 2002, smaller groups of prisoners continued hunger strikes in 2003 and 2004 as well. Even today a group of 2, called the "12th team", are continuing with their strike in a prison.

Hunger strikers were not eating anything, but water, sugar and salt. Some activists took vitamin B tablets, sometimes B1, but usually complex B vitamins. Vitamin tablets had usually been taken according to the political situation and collective decision. But vitamin supply and personal decisions also determined the vitamin intake.

How to quit and intervention were important ethical questions. Doctors at prisons or public hospitals intervened in some cases with the order of prison authorities. Strikers rejected any force-feeding or intravenous fluid replacement, so the interventions took place when the striker lost consciousness due to prolonged starvation. But many strikers ended their action after they were released, and some quitted in the prison voluntarily.

Since the hunger strike survivors had been released when they were in their late periods of action, they had severe weakness, disability and other illnesses. Because there is no universal health coverage in Turkey, and the Ministry of Justice is responsible for the prisoners' health, only when they are in prison, many hunger strike survivors applied to HRFT for treatment just after they were released. Another reason why HRFT was preferred is its knowledge and experience about the medical care of hunger strike survivors, since the 1996 hunger strike

actions. Well-respected human rights activism and reliability of the foundation were important assets, too.

METHODOLOGY

In this study we present the data obtained from the HRFT hunger strike survivor applicants.

Number of hunger strike survivors who applied to HRFT until the end of 2003 is 614. 51 of them were hunger strike survivors from before 2001-actions, mainly from 1996. Numbers of applicants by the years is in Table 1.

Year of application	Number of applicants
2001	338
2002	185
2003	40
Previous years*	51
Total	614

Although four treatment and rehabilitation centers of HRFT (namely Istanbul, Ankara, Izmir and Adana) received the applications and delivered medical care for hunger strike survivors, we studied only Istanbul applicants, because of some practical reasons, such as the accessibility and uniformity of the files. Istanbul center had covered about 70% of all the applications.

In this study we enrolled the applicants who fulfill the inclusion criteria below:

- To be on hunger strike after 20th October 2000 in prison.
- To start hunger strike in the years 2000 or 2001.
- To carry out hunger strike in the years 2000, 2001, and/or 2002.
- Continuing hunger strike minimum 30 days without break.
- Receiving medical care from HRFT Istanbul Treatment and Rehabilitation Center.
- Having necessary information about duration, period, and type and some relevant information about the health outcomes of the hunger strike in their HRFT file.

Data were collected by staff physicians (general practitioners, psychiatrist and physiatrist) and consultants (neurologists and other specialists) of HRFT Istanbul Center.

Relevant data were reviewed using a cross-sectional and retrolective method and analyzed by MS Excel, and SPSS for Windows 12.0.

RESULTS

1- Demographic characteristics:

- Number of reviewed applicants who fulfill the inclusion criteria is 311.
- 243 (%78) were men, and 68 (%22) were women.
- 209 (%67) of the applicants were enrolled by HRFT Istanbul center in 2001, and 102 (%33) in 2002.
- First hunger strike survivor who had been released from the prison due to health reasons has applied to HRFT Istanbul center in 7 June 2001. The most substantial request happened in July 2001. 104 hunger strike survivors came up to HRFT in July. Also August and October 2001, and January 2002 were extremely busy months (**Graph 1**)

Year Application	Month of Application	Total
2001	HAZİRAN	15
	TEMMUZ	104
	AĞUSTOS	27
	EYLÜL	11
	EKİM	32
	KASIM	12
	ARALIK	8
2001 Total		209
2002	OCAK	36
	ŞUBAT	11
	MART	14
	NİSAN	10
	MAYIS	8
	HAZİRAN	8
	TEMMUZ	3
	EYLÜL	1
	EKİM	3
	KASIM	4
	ARALIK	4
2002 Total		102
Grand Total		311

- Cases are shown in Table 2 according to the **birth place**. Half of all the cases were born in Eastern and South-Eastern regions of Anatolia.

Birth Place	Total	%
Mediterranean Side	27	9
Eastern Anatolia	145	47
Aegean Side	11	4
South-Eastern Anatolia	13	4
Central Anatolia	42	14
Black Sea Side	20	6
Marmara Region	45	14
Abroad	1	0
Missing	7	2
Total	311	100

- **Ages** of the cases were 19-46. Average age of the cases is 29,8 (SD=6) Almost 60% of all the cases are younger than 30 years. (**Graph 2**)

Yaş Ortalaması

N	Valid	311
	Missing	53
Mean		29,80
Median		29,00
Std. Deviation		5,990
Minimum		19
Maximum		46

Cinsiyete göre yaş ortalaması

Sex	Mean	N	Std. Deviation
MALE	30,08	243	6,226
FEMALE	28,81	68	4,972
Total	29,80	311	5,990

Yaş gruplarına dağılım

	Frequency	%	Cumulative %
19-25	85	27,3	27,3
26-30	100	32,2	59,5
31-35	75	24,1	83,6
36-40	27	8,7	92,3
41-45	21	6,8	99,0
46+	3	1,0	100,0
Total	311	100,0	

Cinsiyete göre yaş gruplarına dağılım

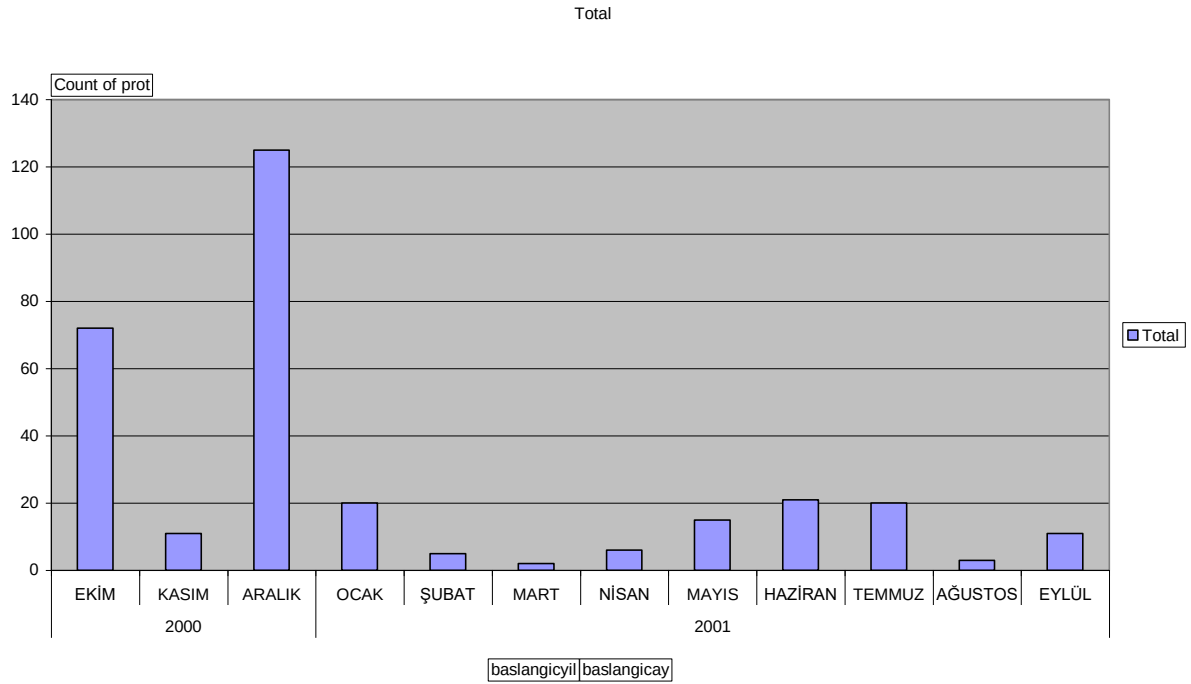
		cinsiyet		Total
		ERKEK	KADIN	
yaskat	19-25	67	18	85
	26-30	75	25	100
	31-35	54	21	75
	36-40	24	3	27
	41-45	21	0	21
	46+	2	1	3
Total		243	68	311

2- Hunger strike periods:

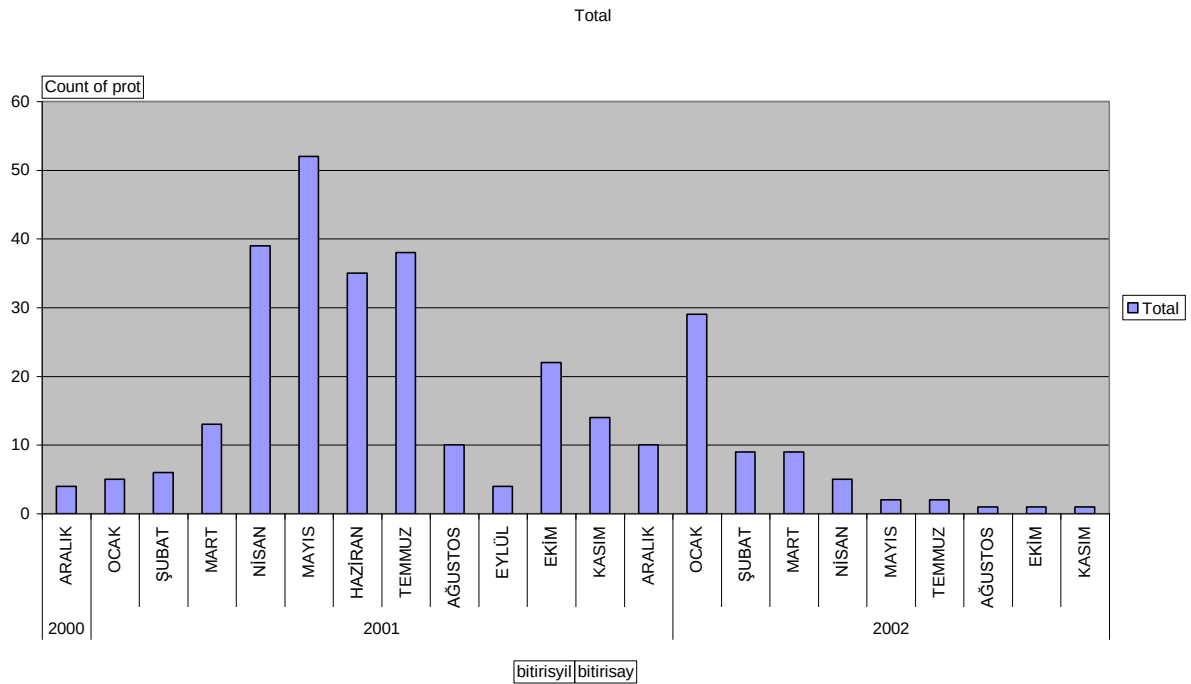
- Start date of hunger strike for 208 cases (67%) is 2000, end date is mostly 2001 (248 cases, 80%)

	END YEAR				
START YEAR	2000	2001	2002	Total	%
2000	4	195	9	208	0,67
2001	-	53	50	103	0,33
Total	4	248	59	311	1,00
%	0,01	0,80	0,19	1,00	

- **Start date** as months show that the majority started hunger strike in December 2000 (some after prison operations), and October 2000 (as first striker group). Second wave of strikers came in June and July 2001. **(Graph 3)**



- **End date** disperses in time. Hunger strikers started to quit the strike mostly in March and April 2001 mostly with intervention without consent. In June and July, after discharges begin, strikers started to end the strike when they release. **(Graph 4)**



3- How and where to quit?

- For 102 of all the cases (33%), hunger strike finished with intervention without consent when they lost their conscious. (Table 3)

How to Quit	Total	%
VOLUNTARY	198	64
INTERVENTION	102	33
NOT KNOWN	11	4
Total	311	100

- Intervention without consent has been exercised on 128 people (41%). But some of them continued hunger strike after the intervention and they quit afterwards voluntarily. (Table 4)

Intervention	Total	%
YES	128	41
NO	172	55
NOT KNOWN	11	4
Total	311	100

- Intervention without consent happened mostly in 2001 from March to June (Graph 5)

END YEAR	END MONTH	How to Quit?			
		NOT KNOWN	VOLUNTARILY	INTERVENTION	Total
2000	ARALIK		3	1	4
2000 Total			3	1	4
2001	OCAK		4	1	5
	ŞUBAT		6		6
	MART		8	5	13
	NİSAN	1	11	27	39
	MAYIS	3	18	31	52
	HAZİRAN	1	18	16	35
	TEMMUZ	2	30	6	38
	AĞUSTOS	2	4	4	10
	EYLÜL		4		4
	EKİM		19	3	22
	KASIM	2	10	2	14
	ARALIK		10		10
2001 Total		11	142	95	248
2002	OCAK		28	1	29
	ŞUBAT		8	1	9
	MART		7	2	9
	NİSAN		5		5
	MAYIS		2		2
	TEMMUZ		1	1	2
	AĞUSTOS			1	1
	EKİM		1		1
	KASIM		1		1
2002 Total			53	6	59
Total		11	198	102	311

- Quit due to release happened mostly in June, July and October 2001, and January 2002 (Graph 6)

END YEAR	END MONTH	Where to quit?				Total
		NOT KNOWN	PRISON	OUTSIDE	RELEASE	
2000	ARALIK		4			4
2000 Total			4			4
2001	OCAK		5			5
	ŞUBAT		5		1	6
	MART		12		1	13
	NİSAN	1	36		2	39
	MAYIS	4	46		2	52
	HAZİRAN	1	22	2	10	35
	TEMMUZ	1	16	2	19	38
	AĞUSTOS	1	6		3	10
	EYLÜL		2		2	4
	EKİM		9	3	10	22
	KASIM	2	8	3	1	14
	ARALIK	1	6	1	2	10
2001 Total		11	173	11	53	248
2002	OCAK		6	4	19	29
	ŞUBAT		5		4	9
	MART		3	1	5	9
	NİSAN			1	4	5
	MAYIS		1	1		2
	TEMMUZ		1	1		2
	AĞUSTOS		1			1
	EKİM			1		1
	KASIM		1			1
2002 Total			18	9	32	59
Total		11	195	20	85	311

- Most of the hunger strikers were in prison as sentenced (220 cases, 71%), but some were detainee (66 cases, 21%)

How in prison	Total	%
NOT KNOWN	25	8
SENTENCED	220	71
DETAINEE	66	21
Total	311	100

- **The reason of release** from the prison was mainly due to article 399 of the Code of Criminal Procedure. (209 cases, %67). Also court decision and the end of sentence were the factors. (Table 5)

Release Ground	Total	%
NOT KNOWN	40	13
END OF SENTENCE	14	5
COURT DECISION	48	15
ARTICLE 399	209	67
Total	311	100

- Almost all the prisoners experienced the prison operation in 19 December 2000 (302 people, 97%).

4 – Duration and Type of Hunger Strikes

- **Type of hunger strike** was mostly continuous (203 cases, 65%) (**Table 6**)

Type	Total	%
INTERMITTANT	108	35
CONTINUOUS	203	65
Total	311	100

- **Duration** of hunger strikes (maximum continuous number of days) is between 30 and 443 days. Average duration is 162,6 days (SD=70,8 days)

Duration

Mean	162,63
Median	168,00
Std. Deviation	70,828
Minimum	30
Maximum	443

- Average **total duration** of hunger strike including intermittent ones is 193,2 days (SD=71,2).

Total duration

Mean	193,19
Median	186,00
Std. Deviation	71,178
Minimum	35
Maximum	443

- App. 20% of all the cases (63 people) made continuous hunger strike 5-6 months. Duration of continuous hunger strike for a quarter of cases was less than 3 months, half of the cases made 3-7 months long continuous hunger strike. (**Table 7**)

gun_agkat

Days	Frequency	Percent	Cumulative Percent
30-60	36	11,6	11,6
61-90	17	5,5	17,0
91-120	27	8,7	25,7
121-150	51	16,4	42,1
151-180	63	20,3	62,4
181-210	52	16,7	79,1
211-240	31	10,0	89,1
241-270	17	5,5	94,5
271-300	10	3,2	97,7
300+	7	2,3	100,0
Total	311	100,0	

- There is no difference for duration of hunger strike by sex. (**Table 8**)

duration by sex

		SEX		Total
		MALE	FEMALE	
DURATION DAYS	30-60	25	11	36
	61-90	11	6	17
	91-120	20	7	27
	121-150	42	9	51
	151-180	51	12	63
	181-210	43	9	52
	211-240	23	8	31
	241-270	14	3	17
	271-300	8	2	10
	300+	6	1	7
Total		243	68	311

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5,817(a)	9	,758
Likelihood Ratio	5,581	9	,781
N of Valid Cases	311		

a. 4 cells (20,0%) have expected count less than 5. The minimum expected count is 1,53.

- Vitamin B intake is an important factor on the health outcomes of the strike. 78% of the cases took vitamin B, full or partially. This depends upon the collective or personal decision of the activists, as well as vitamin supply and other factors. **(Graph 6)**

Vitamin B	Total	%
NONE	34	11
NOT KNOWN	35	11
PARTIALLY	217	70
FULL	25	8
Total	311	100

- When vitamin B intake was observed by the start time of hunger strike that the activists who start in December 2000 are more likely not to take vitamin substitute. Most probably because they start the action just after the prison operations. **(Graph 7)**

START YEAR	START MONTH	NONE	NOT KNOWN	PARTIALLY	FULL	Total
2000	OCTOBER	4	9	58	1	72
	NOVEMBER	2	4	5		11
	DECEMBER	26	20	74	5	125
2000 Total		32	33	137	6	208
2001	JANUARY	1		19		20
	FEBRUARY	1		3	1	5
	MARCH			2		2
	APRIL			6		6
	MAY			13	2	15
	JUNE		2	13	6	21
	JULY			13	7	20
	AUGUST			3		3
	SEPTEMBER			8	3	11
2001 Total		2	2	80	19	103
Total		34	35	217	25	311

5- Health problems raised by hunger strike:

1- Main symptoms and findings:

Since the physical examination could be performed when patients applied to our center, namely when they were released, then sometimes long after they quitted hunger strike and got initial medical treatment, findings and diagnosis usually refers the late findings. This means that the frequency of symptoms and findings are minimum values. Some other patients could have been had these findings before they applied to our foundation. If findings were relieved or faded, and have never been recorded by the doctors or consultants of HRFT, they were not counted.

a- Nystagmus: This term refers to involuntary rhythmic movement of the eyes. Cerebellar diseases and Wernicke syndrome are among the causes of nystagmus.

Nystagmus have been observed in 105 cases, 33,8% of all.

nistagmus

		Frequency	Percent
Valid	NO	122	39,2
	YES	105	33,8
	Total	227	73,0
Missing	System	84	27,0
Total		311	100,0

b- Cerebellar findings are caused by hypotonia, loss of muscle tone and incoordination. Here, we tested mainly dysmetry and dysdiadochokinesis in the upper or lower extremities.

Total 89 cases, namely 28,6% had evident cerebellar findings.

serebellar

		Frequency	Percent
Valid	NO	128	41,2
	YES	89	28,6
	Total	217	69,8
Missing	System	94	30,2
Total		311	100,0

c- Ocular findings include visual intolerance to light, watered eyes, ocular pain, sight defects and ocular movement paralysis or paresis.

Total 147 cases, 47.3% had one of the symptoms or findings above.

goz

		Frequency	Percent
Valid	NO	74	23,8
	YES	147	47,3
	Total	221	71,1
Missing	System	90	28,9
Total		311	100,0

d- Amnesia refers to a loss of past memories as well as to an inability to form new ones, despite an alert state of mind. Our cases had different forms of amnesia, such as a defect in the recall and reproduction of memories that had been formed long before the onset of the illness, namely retrograde amnesia; and failure of learning or anterograde amnesia. Some patients had different collection of these pictures from mild to severe degrees. Some of the amnesic pictures had been diagnosed as organic, and some as psychogenic by the psychiatrists.

Total 169 cases, or 54,3% had one kind of amnesic state.

amnezi

		Frequency	Percent
Valid	NO	54	17,4
	YES	169	54,3
	Total	223	71,7
Missing	System	88	28,3
Total		311	100,0

e- Dysarthria: This is one of the speech disorders. Patient is able to understand what is heard, and can write or read, but has defect in articulation. The principal abnormalities are slowness of speech, slurring, monotony, and unnatural separation of the syllables of the words. This is characteristic of acute and chronic cerebellar lesions.

51 of our cases, or 16,4% had noticeable dysarthria.

dizartri

		Frequency	Percent
Valid	NO	169	54,3
	YES	51	16,4
	Total	220	70,7
Missing	System	91	29,3
Total		311	100,0

f- Gait ataxia, or inability to coordinate muscle functions for gait is characterized with a wide based (separation of legs), unsteady and irregular steps. Gait ataxia in our cases were mostly cerebellar, but impairment of joint position sense and deep sense due to neuropathies also caused sensory ataxia.

134 of all cases (43,1%) had gait ataxia symptoms.

ataksi

		Frequency	Percent
Valid	NO	91	29,3
	YES	134	43,1
	Total	225	72,3
Missing	System	86	27,7
Total		311	100,0

g- Muscle weakness and loss of muscle tone are characteristic and widespread findings for hunger strikers. Among the reasons, one can consider about effects of general cachexia or weight loss, peripheral neuropathies and cerebellar disorders. Muscle weakness was usually limited or more common in the proximal lower extremity muscles, such as hip flexors, and gluteus muscles.

121 of all cases, or 38,9% had some degree of muscle weakness.

kas kuvvetsizliđi

		Frequency	Percent
Valid	NO	91	29,3
	YES	121	38,9
	Total	212	68,2
Missing	System	99	31,8
Total		311	100,0

2- Major neurological diseases:

a- Nutritional peripheral polyneuropathies are one of the most common diseases that have been diagnosed in the hunger strike survivors. Peripheral poly-neuropathies are characterized by sensory deficits, reflex changes and loss or impairment of deep sense including position and vibration senses. Paresthesia, dysesthesia and burning feet were the most common symptoms and findings. Main reason of NPNP in hunger strike survivors is Vitamin B deficiency.

126 cases, 40,5% had NPNP.

noropati

		Frequency	Percent
Valid	NO	99	31,8
	YES	126	40,5
	Total	225	72,3
Missing	System	86	27,7
Total		311	100,0

b- Wernicke Encephalopathy or Wernicke disease is the pathognomonic result of hunger strike. Wernicke Encephalopathy is characterized by nystagmus, abducence and conjugate gaze palsies, gait ataxia, and mental confusion. Wernicke disease is due to a deficiency of Thiamine (Vitamin B). Although the disease is observed mainly in alcoholics, Wernicke disease was reported also in hunger strikers in previous studies.

In our series, Wernicke Disease was diagnosed by neurologists and/or physiatrist. Since many cases applied to our centers weeks or sometimes months after they quitted hunger strike, some of our diagnoses are somehow “sequels” of Wernicke Disease, although some diagnoses are clear and definite. For diagnosis of Wernicke sequel, examiner should have found at least one element of the triad (nystagmus, gait ataxia – should be cerebellar – and ocular palsy, but not mental confusion, because it is usually an acute symptom) and positive history. Dysarthria, cerebellar findings, loss of muscle tone, and amnestic state support the Wernicke diagnosis.

154 of all cases (49,5%) had Wernicke syndrome.

wa

		Frequency	Percent
Valid	NO	83	26,7
	YES	154	49,5
	Total	237	76,2
Missing	System	74	23,8
Total		311	100,0

c- Wernicke-Korsakoff Syndrome is the most severe picture that we observed in hunger strike survivors. This is also called as Korsakoff psychosis and it refers to a unique mental disorder in which retentive memory is impaired out of all proportion to other cognitive functions. The main characteristic of Korsakoff psychosis is amnesic state, but confabulation is another symptom could be observed. Korsakoff psychosis was usually observed in relation with the Wernicke symptoms, and was called as Wernicke-Korsakoff Syndrome. WKS is an irreversible disease and patients are dependent in the rest of their life.

There are 30 WKS (9,6%) among all the hunger strike survivors in our series.

wks

		Frequency	Percent
Valid	NO	203	65,3
	YES	30	9,6
	Total	233	74,9
Missing	System	78	25,1
Total		311	100,0

3- Neurological diseases and related factors:

a- Intervention was one of the important factors for Wernicke Disease and WKS. Among the patients who experienced any intervention when unconscious, had significantly higher rate of Wernicke disease and WKS. (Chi quare 41,6, $p < 0.001$ for WD, Chi quare 32,6, $p < 0.001$ for WKS) One can consider this as a result of medical malpractice (giving fluid replacement without thiamine), but since all those patients have been unconscious, one can consider that they were most severe cases anyway. This result needs further research.

wa * intervention Crosstabulation

		INTERVENTION			Total
		NO	YES	NOT KNOWN	
WERNICKE	NO	68	13	2	83
	YES	60	91	3	154
Total		128	104	5	237

wks * intervention Crosstabulation

		INTERVENTION			Total
		NO	YES	NOT KNOWN	
WKS	NO	125	75	3	203
	YES	2	26	2	30
Total		127	101	5	233

b- Vitamin intake: When we look at the frequency of WA between the cases who get or didn't get vitamin supplement during the hunger strike, we cannot find any significant difference between the groups (Chi Square=3,6; $p>0,05$)

wa * vitamin intake crosstabulation

		Vitamin intake				Total
		NONE	FULL	PARTIALLY	NOT KNOWN	
WA	NO	9	11	60	3	83
	YES	18	14	107	15	154
Total		27	25	167	18	237

But there is significant difference between the cases who get or didn't get vitamin supplement during the hunger strike, for WKS (Chi Square=31,7; $p<0,001$)

wks * vitamin intake crosstabulation

		Vitamin intake				Total
		NONE	FULL	PARTIALLY	NOT KNOWN	
WKS	NO	15	25	149	14	203
	YES	12	0	14	4	30
Total		27	25	163	18	233

There is significant difference between the cases by vitamin intake for N-PNP (Chi Square=16,06; $p<0,01$) This result is clear evidence that the etiological factor of PNP is Vitamin B deficiency in hunger strike survivors.

noropati * vitamin intake Crosstabulation

		Vitamin intake				Total
		NONE	FULL	PARTIALLY	NOT KNOWN	
neuropathies	NO	17	5	64	13	99
	YES	10	20	91	5	126
Total		27	25	155	18	225

c- Duration of hunger strike is related to WA , but not WKS.

WA*duration of hs

	wa	N	Mean	Std. Deviation	Std. Error Mean
day	NO	83	142,47	71,137	7,808
	YES	154	182,36	60,921	4,909

Student's t test: $t = -4,5$; $p < 0,001$

WKS*duration of hs

	wks	N	Mean	Std. Deviation	Std. Error Mean
day	NO	203	168,85	69,427	4,873
	YES	30	164,37	54,645	9,977

Student's t test: $t = 0,3$; $p > 0,05$

4- Functional disability:

Hunger strike survivors have experienced different degrees of disability. Some patients have permanent disabilities and are dependent in all their life. Psychiatrist and physiotherapist filled Barthel ADL Index to measure the functional independence of the patient. In the first examination, 73 out of 176 cases got a score less than 100, meaning they were partially dependent. 28 cases were mild dependent, and 45 cases were moderate to severe dependent. 13 of those dependent cases got less than 70 point, namely severe dependency score.

ADL

		Frequency	Percent
Valid	35	1	,3
	45	2	,6
	50	2	,6
	55	1	,3
	60	1	,3
	65	5	1,6
	70	1	,3
	75	5	1,6
	80	18	5,8
	85	9	2,9
	90	14	4,5
	95	14	4,5
	100	103	33,1
	Total	176	56,6
Missing	System	135	43,4
Total		311	100,0

6- Medical Care and Rehabilitation:

Applicants got medical care from HRFT according to their needs, and continued for a rehabilitation program if the needed. The following treatment and rehabilitation procedures were generally applied:

1- Fluid and electrolyte replacement.

2- Thiamine and other vitamins replacement (other B vitamins, folic acid, niacine,, Cobalamine, and multivitamins-minerals)

3- Nutritional supplements.

4- Medicine

5- Exercise and physiotherapy

129 of all cases had rehabilitation program. 90 of them were given home exercise program and controlled by physiotherapist in several times. 39 patients were given a exercise program in the gymnasium of our center with physiotherapist.

FTR

	Frequency	Percent
HOME	90	28,9
GYM	39	12,5
NO	182	58,5
Total	311	100,0

- Patients were also followed up by psychiatrist regularly. Beside the Wernicke-Korsakoff Syndrome, PTSD, depression and other psychiatric diseases were common and needed psychotherapy and/or psycho-pharmacotherapy. **Amnesia** was a big challenge for psychiatrist.