Original Research Article

Health care needs of juvenile offenders in Turkey

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Abstract

Introduction: The number of juvenile offenders in correctional facilities has been increasing every year and these children constitute a major risk group in the society and this has become a major public health problem. Diseases are more prevalent in correctional facilities and correctional facilities offer unique opportunities to identify, improve the health of disadvantageous groups who have chaotic life styles and are difficult to reach out and to provide health education to these groups.
Objective: This study was carried out to determine healthcare needs of juvenile offenders.
Materials and Methods: This descriptive study was done in the Juvenile Closed Penitentiary Institution. The study population consisted of 268 detained, convicted and remand prisoners in the Juvenile Closed Penitentiary Institution. The total number of children to be included in the sample group was determined as 158 using the stratified random sampling method. Data were collected using the Questionnaire Form to Determine Healthcare Needs and Physical Examination Form. Statistical analysis of data was done using SPSS 18.00 Statistics program.
Results: In the study, 10.2% of the children were younger than 16 years old; 63% were married and 24.7% were from disintegrated families and 67.9% had multiple siblings. Eight point two percent of the children were illiterate; 89.2% smoke, 70.1% drink alcohol, 60.8% use marijuana, 32.9% use volatile substances and 18.4% use other types of addictive drugs. Families of 52.5% of the children were migrants within the country. Reasons for internal migration were economic reasons, feud, wars and conflicts, family pressure. Forty point six percent of the children had an offender in the family, 38.6% of the children were imprisoned before and 32% were sentenced to prison for 10 years or more. Some of most stressful factors for children were being in prison, and not being able to see their families and the way they cope with stress is to harm themselves and others. Based on the findings of physical examinations; 3.8% of the children had high systolic blood pressure and 64.6% had high respiratory rate and 16.5% were overweight and 1.9% were obese according to the body mass index.

Thirty four point two percent of the children want to self-harm and 19.7% want to harm others and 25.6% felt partially healthy and 17.3% did not feel healthy.

Conclusions: The study determined that juvenile offenders in correctional facilities are from disadvantaged families, and have several risk factors that can have a negative effect on their health depending on their development stage and conditions of living. The fact that children have a wide range of health issues demonstrates that healthcare services for this group should be provided with a multidisciplinary team approach.

Key words

Juvenile Offender, Health Care Needs, Public Health Nursing.

Introduction

Children are the foundation and the future of a society. The Declaration of the Rights of the Child defines a child as any human being under the age of eighteen [1]. Juvenile offenders in correctional facilities whose number are increasing every year are considered an important vulnerable group both being children and being incarcerated in prison. Acts and anti-social tendencies by a young person especially one below the age (younger than 18) deviating from social norms and values at which ordinary criminal prosecution is possible are defined as juvenile delinquency [2]. A child who is subject to prosecution or proceeding or is taken into custody for the crimes the child has committed is defined as a juvenile offender [3, 4].

The most important criterion that differentiates juvenile delinquency from adult offences is the age limit stipulated by each country. Although the age of criminal responsibility varies between 7-18 depending on the country [5], minimum age of criminal responsibility in Turkey is 12 according to the law [6, 7, 8]. The number of juvenile offenders due to fast and irregular urbanization that came with industrialization and accompanying high unemployment, income inequality, increase in young population, changing social order and family structure has been increasing gradually [9, 10] and just like the rest of the world this has been under the spotlight being an important public health issue that needs to be solved in Turkey.

When statistics about juvenile delinquency are reviewed, juvenile delinquency rate increases every year. According to the statistics published by the Turkish Statistics Institute (TUIK) the number of children accused for delinquency in 2019 was increased by 25.5% compared to 2015, reaching 168.250 [11]. According to the statistics published by the Department of Prisons and Detention Houses of the Turkish Ministry of Justice the number of children between the ages of 12-18 in correctional facilities as of 28/02/2021 was 1,615 [12]. The most common offenses committed by children are in descending order: theft, illegal drugs and sex crimes [13].

Correctional facilities are places of communal life where people cannot choose the people they live with and the conditions they live in; where they have to spend all parts of their lives mostly accompanied by important health problems and where diseases are more common than they are in general public [14, 15]. Many studies show that detained and convicted prisoners are at more risk for infectious and other diseases than the general public [16]. Due to the reasons including presence of variety of health problems and associated increase in healthcare needs, limited access to healthcare and previous unfavourable lifestyle choices, improving and maintaining health is especially important in this population group [17].

Access to healthcare is one of the basic rights of detained and convicted prisoners during their imprisonment just like any other individual and

the state is responsible for providing this healthcare service at equal terms with other citizens of the state in accordance with all the relevant documents and regulations [18]. On the other hand, correctional facilities offer unique opportunities to determine and improve the health of prisoners coming from disadvantaged groups who have chaotic life styles and are difficult to reach out and to provide them health education [19].

Correctional facilities and healthcare services provided in these facilities are inseparable part of public health services. Even when people come to correctional facilities in good health, they can leave with HIV/AIDS, tuberculosis, dermatological diseases, mental health problems or substance abuse problems and return to the society with a worse health than they had before which could pose a threat for the public health [13, 14]. Therefore the importance of primary healthcare services provided in correctional facilities and the key role of nurses as the main provider of these services within the framework of a public health service that improve the health of the general public should be emphasized [19]. Although the role of public health nurses can differ depending on the country, their main role is to have a function that focuses on public health. Therefore public health nurses above all should believe in the equality in healthcare and plan and provide their services according to changing healthcare services and by being aware of the effects on health [20].

A multidisciplinary team approach is needed to provide an effective care to juvenile offenders, facilitate their re-adaptation into the society, maintain their physiological, mental and social well-being like other children [1] and to plan, implement necessary healthcare services and to ensure rehabilitation and reintegration of these children into the society [19].

Due to all these reasons, providing well-planned quality public health services that include good education and consultancy by nurses who play a key role is believed to contribute significantly to encouraging children to avoid risky behaviour, show healthy and safe behaviour, gain knowledge, skills, positive attitude and behaviour, develop healthy living habits and improve life style and making it possible for these children to become good role models and provide guidance for the people they live with and for their future children when they are reintegrated into the society.

Objectives

This study was carried out to determine healthcare needs of juvenile offenders.

Materials and methods

Ethical clearance - Approval of the Scientific Research and Ethics Committee of Muğla Sıtkı Koçman University was obtained (protocol no: 52, decision no: 51, 19.03.2015) and necessary written permits were obtained from the Department of Prisons and Detention Houses of the Turkish Ministry of Justice and written consents of participants were obtained.

Type of study – This was a descriptive study.
Study area – This study was done in the Juvenile Closed Penitentiary Institution of the Turkish Ministry of Justice in Izmir.
Study population – The population of this study consisted of 268 juvenile offenders in the Juvenile Closed Penitentiary Institution of the Turkish Ministry of Justice in Izmir in 2015-2016.

Inclusion criteria – Children who volunteered and signed informed consent were included in the study.
Study period – This study was done between November 2015 and June 2016.
Sample size - The study sample consisted of 55 children from detained prisoners block, 60 children from remand prisoners block, and 43 children from convicted prisoners block (**Table - 1**).
Study tool -Data were collected using the Questionnaire Form to collect socio-demographic data and to determine Healthcare

Needs and using Physical Examination Form consisting of 13 parts.

Data analysis- Socio-demographic data were considered independent variables and physical examination and data to determine healthcare needs were considered as dependent variables. Statistical analysis of the data was done with the SPSS 18.00 (Statistical Package Social Sciences) program and descriptive statistics (number, percentage) and chi-square test were used.

Table – 1: Sampling Stage of the Study According to the Site Plan.

SAMPLING STAGE OF THE STUDY ACCORDING TO THE SITE PLAN		
BUILDING A **(Detained)**	**BUILDING B** **(Remand)**	**BUILDING C** **(Convicted)**
A10 A11 A9 A12	B10 B11 B9 B12	C10 C11 C9 C12
A6 A7 A5 A8	B6 B7 B5 B8	C6 C7 C5 C8
A2 A3 A1 A4	B2 B3 B1 B4	C2 C3 C1 C4
12 Units	**12 Units**	**12 Units**
NUMBER OF CHILDREN IN BUILDING A **94**	**NUMBER OF CHILDREN IN BUILDING B** **101**	**NUMBER OF CHILDREN IN BUILDING C** **73**
Sample size in Building A **55**	**Sample size in Building B** **60**	**Sample size in Building C** **43**
Total number of children in the buildings: 268		
Total number of children to be included in the sample group: 158		

Results

Thirty eight percent of the children were remand prisoners and 27% were convicted prisoners. In this study 10.2% of the children were younger than 16 years old; 6.3% were married and 24.7% were from disintegrated families and more than half of them (67.9%) have multiple siblings. Fifteen point eight percent of the children were elementary school graduates, 8.2% were illiterate and 86.5% want to continue their education. Eighty eight percent of the children had worked before, 32% are sentenced for more 10 years, 31% had stayed in the prison for 12 months or longer and 38.6% were imprisoned before. Additionally 89.2% of the children smoke, 70.1% drink alcohol, 60.8% use marijuana, 32.9% use volatile substances and 18.4% use other types of addictive drugs.

More than half of the children engage in sports in their free times, 61.8% play/listen to music, half of them exercise, 42 % read books, newspapers, 19.7% draw and 11.5% play computer games and 10.8% study (**Table - 2**).

Table – 2: Demographics of Juvenile Offenders and Their Families (n:158).

Demographics	**n**	**%**
Group		
Detained	55	34.8
Remand	60	38.0
Convicted	43	27.2
Age (Year) (16.51±0.859, Min:13, Max:17) (n:157)		
<16	16	10.2
16-17	141	89.8
Marital Status		
Single	147	93.0
Married	10	6.3
Divorced	1	0.7
Family Structure		
Nuclear Family	87	55.0
Disintegrated family	39	24.7
Large family	32	20.3
Education		
Illiterate	13	8.2
Elementary school	25	15.8
Secondary school	38	24.1
High school	50	31.6
Intention to Continue Education		
Yes	135	86.5
Employment Status		
Yes	139	88.0
Previous Imprisonment		
Yes	61	38.6
Total sentence (n:97)		
1-5 Years	21	21.6
5 year 1 month - 10 year	45	46.4
10 year 1 month - 47 year	31	32.0
Substance Used		
Tobacco	141	89.2
Alcohol	110	70.1
Volatile substances	51	32.9
Marijuana-cocaine	96	60.8
Other addictive substances (bonzai, antidepressants)	29	18.4
Exercise		
Yes	78	50.6
Spare Time Activities*		
Sports	105	66.9
Listening to music	97	61.8
Attending courses	87	55.4
Reading books/newspapers	66	42.0
Drawing	31	19.7
Playing computer games	18	11.5

Studying	17	10.8
Other**	44	28.0
Mother's Age (N:120)		
27-30	2	1.7
31-40	54	45.0
41-50	54	45.0
51-63	10	8.3
Mother's Education (n:125)		
Illiterate	41	32.8
Elementary school graduate	44	35.2
Secondary school graduate	23	18.4
High school graduate	8	6.4
Mother's Occupation (n:144)		
Homemaker	123	85.4
Worker	17	11.8
Painter, flower seller, stallholder, seamstress	4	2.8
Mother's social security (n:87)		
Yes	42	48.0
No	45	52.0
Father's Age (n:119)		
32-40	17	14.3
41-50	74	62.2
51-65	28	23.5
Father's Education (n:127)		
Illiterate	14	11.0
Elementary school graduate	45	35.4
Secondary school graduate	36	28.3
High school and university graduate	15	11.8
Father's occupation (n:142)		
Unemployed	17	12.0
Worker	73	51.4
Shopkeeper	14	9.9
Civil Servant	7	4.9
Retired, farmer, scrap dealer, peddler	31	21.8
Father's Social Security (n:95)		
Yes	61	64.0
No	34	36.0
Internal migration for the family (n:158)		
Yes	83	52.5
Reason for migration* (n:45)		
Economic	37	82.2
Feud	6	13.3
Education / War / Family pressure	3	6.8
Offender in the Family (n:155)		
Yes	63	40.6
Relation of the Offender with the Child (n:56)		
Mother	3	5.4

Father	24	42.9
Sibling	25	44.6
Family history of diseases (n:158)		
Hypertension	32	20.3
Diabetes	31	19.6
Cardiovascular disease	28	17.9
Kidney disease	20	12.8
Cancer	13	8.5
Epilepsy	7	4.5
Tuberculosis	5	3.2
Hepatitis B	5	3.2
Alzheimer	1	0.6

* percentages are shown according to the n value as choosing more than one answer is allowed.
*** talking, watching TV, playing, writing letters, taking a shower, sleeping, eating, self-injury/cut.

Table – 3: Sleeping, Eating and Hygiene Habits of Children (n:158).

Sleep disorders (n:158)	**n**	**%**
Yes	85	53.8
No	73	46.2
Types of Sleep Disorder (n:158)		
Onset insomnia	73	61.9
Nightmares	46	39.0
Waking up too early	48	40.7
Number of meals a day (n:158)		
One meal	4	2.4
Two meals	20	12.7
Three meals	99	62.7
More than three meals	35	22.2
Have Breakfast (n:154)		
Yes	120	77.9
No	34	22.1
Water Consumption (n:158)		
One-three glasses a day	60	38.0
Four-six glasses a day	36	22.8
Seven or more glasses a day	62	39.2
Eating habits and appetite (n:158)		
Generally lacking appetite	27	17.0
With normal appetite	99	62.7
Excess appetite	32	20.3
Hand washing time* (n:158)		
Before meals	138	87.3
After meals	130	82.3
Before using the toilet	33	20.9
After using the toilet	149	94.3
After waking up in the morning	134	84.8
Before going to bed in the evening	66	41.8
Irregular	81	51.3

Cleaning Materials for Hands* (n:158)		
Soap	146	92.4
Water	10	6.3
Dishwashing liquid-shampoo	9	5,7
Tooth brushing (n:158)		
Yes	136	86.1
No	22	13.9
Frequency of tooth brushing (n:151)		
Never	8	5.3
Once a day	47	31.1
Two-three times a day	71	47.0
Irregular	25	16.6
Frequency of Taking a Bath/Shower (n:158)		
Once a day	60	38.0
Two-three times a day	16	10.2
Every other day	47	29.7
Once a week	34	21.5
Once a month	1	0.6
Post Urination Cleansing (n:158)		
Yes	138	87.3
No	20	12.7
Post Defecation Cleansing (n:156)		
Yes	153	98.1
No	3	1.9
Frequency of Changing Underwear (n:158)		
Every day	71	44.9
One-two times a week	35	22.2
Three-four times a week	48	30.4
Occasionally	4	2.5
Frequency of Changing Clothes (n:156)		
Every day	43	27.6
One-two times a week	52	33.3
Three-four times a week	53	34.0
Occasionally	8	5.1

* percentages are shown according to the n value as choosing more than one answer is allowed.

Regarding family characteristics of these children; 90% of the mothers were between 31-50 years old; 32.8% of the mothers were illiterate and 85.4% were homemakers. Seventy six point five percent of the fathers were between 32-50 years old, 11.0% were illiterate and 12% are unemployed. Fifty two point five percent of the children's families had migrated within the country and 82.2% of these families migrated due to economic reasons and 13.3% migrated due to feuds. Forty point six percent of the children had an offender in the family (42.9% father, 44.6% sibling). Additionally hypertension, diabetes, cardiovascular diseases, kidney diseases, cancer and a low percentage of tuberculosis (3.2%) were found in the children's families (**Table - 2**).

In the study, 22.1% of the children do not have breakfast, 38% drink 1-3 glasses of water a day, 17% have lack of appetite, 53.8% had sleep problems and 61.9% of those who had sleep

problems had onset insomnia and 39% have nightmares. Eighty seven point three percent of the children wash their hands before meals and 82.3% after meals and 20.9% of the children wash their hands before using the toilet and 94.2% after using the toilet and 92.4% of the children use soap, 6.3% use only water to wash their hands and 13.9% do not brush their teeth. Eighty seven point three percent of the children clean themselves after urinating, 98.1% clean themselves after defecating and 44.9% of the children change their underwear every day and 2.5% of the children change their underwear occasionally and 5.1% change their clothes occasionally (**Table – 3**).

Table – 4: Stress Factors, Coping Methods, Intention to Self-Harm and Harming Others (n:158).

Stress Factors* (n:158)	**n**	**%**
Problems with friends	32	32.3
Imprisonment	24	24.2
Not being able to see family	21	21.2
Court day	7	7.1
Economic problems	2	2.0
Problems with the correctional facility staff	1	1.0
Other**	32	32.3
Stress Coping Strategies* (n:158)		
Patience	17	18.5
Avoiding the thought	17	18.5
Talking /playing games with friends	7	7.6
Self-injury	9	9.8
Harming others	3	3.3
Damaging objects/ structures	5	5.4
Perform religious rituals	7	7.6
Other**	37	40.2
Self-injury intention (n:158)		
Yes	54	34.2
Self-injury method (n:21)		
Cutting	16	76.2
Suicide attempt	5	23.8
Intention to harm others (n:157)		
Yes	31	19.7
Methods to harm others (n:3)		
Battery	2	66.7
Murder attempt	1	33.3

* percentages are shown according to the n value as choosing more than one answer is allowed.
**being alone, aspersion, isolation, coercion, injustice, thoughts about past, worry about future, not being able to have news, not being able to smoke and do drugs, violence, crowded environment, swearing etc.
***Taking shower, reading books, listening to music, breathing exercise, smoking, dreaming, doing drugs, walking, swearing, crying, eating etc.

Thirty two point three percent of the children were under stress due to problems with friends, 24.2% due to imprisonment, 21.1% due to not being able to see their families, 7.1% due to court process and 2% were under stress due to money problems. Stress coping strategies for children

under stress were as following: 18.5% cope by being patient, 18.5% by trying not to think, 7.6% by performing religious rituals, 7.6% talking and playing games with friends, 9.8% by self-injury, 3.3% by harming others and 5.5% by damaging structures and items. Thirty four point two percent of the children want to self-harm, 19.7% want to harm others and 16 children have cut themselves and 5 are suicidal (**Table - 4**).

Table – 5: Self Perceived Health, Vital Signs, Body mass index (BMI) (n:158).

Self-Perceived Health (n:156)	**n**	**%**
In good health	89	57.1
In partially good health	40	25.6
Unhealthy	27	17.3
Fever (n:158)		
Normal (36,4°C – 37 °C)	37	23.4
High	1	0.7
Low	120	75.9
Systolic Blood Pressure (n:158)		
Normal (112-128 mmHg)	30	19.0
High	6	3.8
Low	122	77.2
Diastolic Blood Pressure		
Normal (66-80 mmHg)	61	38.6
High	-	-
Low	97	61.4
Pulse rate (n:158)		
Normal (60-100/min)	158	100.0
Body mass index (BMI) (n:158)		
Underweight (<18.5 kg/m2)	1	0.6
Normal weight (18.5-24.9 kg/m2)	128	81.0
Overweight (25-29.9 kg/m2)	26	16.5
Obese (30 kg/m2 and over)	3	1.9

Table – 6: Physical Examination Findings According to the Systems in the Body (n:158).

SYSTEMS	**n**	**%**
Skin		
Paleness	21	13.3
Itchiness	53	33.5
Scar (cut etc.)	123	77.8
Hair loss	40	25.3
Oral		
Decayed tooth (1-7 decayed teeth)	111	70.3
Missing tooth (1-6 missing teeth)	56	35.4
Gingival bleeding	43	27.2
Respiratory system		
Dyspnoea	49	31.0
Cough	35	22.2
Sputum	53	33.5
Haemoptysis	8	5.1

Cardiovascular system		
Palpitation	23	14.6
Chest pain	30	19.0
Light headedness	11	7.0
Gastrointestinal system		
Heartburn	61	38.6
Nervous system		
Hand tremors	8	5.1
Loss of strength	29	18.4
Dizziness	13	8.2
Emotional state and mood		
Forgetfulness	97	61.4
Nail biting	53	33.5
Urinary system		
Pain when urinating	17	10.8
Kidney stone/gravel	5	3.2
Urine incontinence	26	16.5
Nocturnal incontinence	10	6.4
Musculoskeletal system		
Low back pain	80	50.6
Scoliosis	14	8.9
Sense organs		
Eye		
Visual impairment	44	27.8
Colour blindness	5	3.2
Ear		
Hearing impairment	11	7.0
Ear pain	21	13.3
Nose		
Nose bleeding	22	13.9
Deviated septum	36	22.8

In the study 25.6% of the children think that they were partially healthy and 17.3% think that they were healthy. Based on the findings of physical examinations; 3.8% of the children had high systolic blood pressure and 16.5% are overweight and 1.9% are obese according to the body mass index (**Table - 5**). Based on the findings of skin examinations of the children, they had paleness, itching, scar tissue due to cut, hair loss, and based on the oral health evaluation 27.2% of the children had gingival bleeding, 70.3% had decayed teeth. In the study 31.0% of the children had dyspnoea, 22.2% had coughs, 33.5% had sputum and 5.1% had haemoptysis, and based on cardiovascular system examinations 14.6% of the children have palpitations, 7.5% light headedness, 19.0% had chest pain and based on gastrointestinal system examinations 38.6% of the children had heartburn; based on nervous system examinations 5.1% of the children had hand tremors and 8.2% have dizziness. Based on the evaluations of emotional state and mood, 61.4% of the children had forgetfulness, 33.5% bite their nails; based on urinary system examinations 10.8% of the children have pain when urinating, 3.2% had kidney stone/gravel, 16.5% had urinary incontinence, 6.4% had nocturnal incontinence; based on musculoskeletal system examinations, 50.6% of the children had low back pain, 8.9%

had scoliosis; based on sense organs examinations, 27.8% had visual impairment, 3.2% had colour blindness, 7.0% had hearing impairment , 13.3 had ear pain, 13.9% had nose bleeding, and 22.8% have deviated septum (**Table- 6**).

Discussion

Majority of the children included in the study (89.8%) were in 16-17 age group (**Table - 2**). According to the 2020 statistics of the Turkish Statistics Institute (TUIK), the number of juvenile offenders increases every year [11]. According to the literature review, majority of juvenile offenders are 15 years and older and the minimum number of juvenile offenders is seen in the 0-11 age group [21, 22]. Adolescence is the period where positive and negative developmental differences occur, a consistent sense of identity is formed and behavioural problems start to show [23]. It is widely known that juvenile delinquency and crimes committed by young people are mostly one off crimes and do not involve violence most o the times and only 5-10% of adolescents commit violent crimes. Family environment, peer pressure, mental disorders, lack of parental guidance/control, poverty, family disintegration, migration, previous crimes, aggressive behaviour, alcohol/substance abuse and lack of self-control have a major impact on juvenile delinquency [24, 25, 26, 27]. Children do not yet have a social self during their socialization process and are not mature enough and do not have discernment skills and when crimes are committed by children during puberty which is a complicated and problematic phase of transitioning into adulthood, this indicates that this should be addressed using pedagogical methods [13]. Considering the fact that children who are an important part of the society is the future of that society, any deviation from the normal childhood development can have a negative impact on children's physical, social and psychological development and can cause irreversible harm on these children. Effective interventions for criminal behaviour in childhood can prevent repeating of potential criminal behaviour in adulthood. Therefore it is very important to understand the reasons of criminal behaviour in childhood and adolescence to take preventive measures and implement effective interventions. There are many risk factors in children's lives which can lead to juvenile delinquency. Although it is not possible to claim that children can commit crimes solely and directly as a result of factors affecting criminal behaviour, these can provide basis for children to become vulnerable against risk factors that cause juvenile delinquency [28]. This demonstrates that juvenile delinquency problems should be understood well and addressed with a systematic and multidisciplinary team approach as a public health problem in order to prevent juvenile delinquency, protect and improve children's health, [2] and rehabilitate juvenile offenders to reintegrate them into the society as healthy individuals and warrants that family, social policies and regulations should be urgently discussed and reviewed.

In the study 24.7% of the children are from disintegrated families, and more than half of the children have multiple siblings which is considered as an important finding (**Table - 2**). Children in families where parents are divorced, separated are negatively affected causing psychological, social and economic disadvantages in the lives of these children. When children have difficulties due to these disadvantages, it can lead to behavioural problems. Insufficient social support system for the child in the process following the disintegration of the family can lead to various problems [28]. The most important factor to prevent juvenile delinquency is family. Being the smallest unit of a society, families have a lifelong effect on children who are the future of the society. Raising a child to be a good person first starts with the education in the family. In this regard the family acts as a protective shield against dangers and juvenile delinquency. Families have big responsibilities to prevent juvenile delinquency [10]. It is very important that families provide healthy education and

guidance and direction to their children. Family disintegration has a negative impact on the development of the child. Family disintegration is considered to be an important factor in delinquency. Additionally strict and too authoritarian parents can also play a role in juvenile delinquency [29]. Therefore families should be supported and given information on child education and children who are at risk in potentially dysfunctional families are followed closely and interventions should be planned and implemented. When family demographics are examined, most parents are at reproductive age which can mean that there can be more siblings for these children and this can affect parents' ability to care and nurture every child in their crowded family. Furthermore in crowded families not all children get enough attention and children can be at risk of negligence or abuse which causes children to look for other people to meet their need for love [30]. In this case the children who cannot find support from their families will turn to other people for support and the fact that majority of the children reported that they had a job in this study may indicate that children tend to engage in illicit work, are paid under the table to bring more income to the family, which can increase the risk of delinquency. In addition to actions taken to prevent juvenile delinquency, this shows the need and importance of family planning services and of providing education and consultancy to families to educate them on the effect of having too many siblings on the individual child of that family. Additionally consultancy with a multidisciplinary approach provided to families of juvenile offenders can contribute significantly to preventing occurrence and repeating of delinquency and reducing the risk of committing a crime in adulthood. International conventions on prevention of juvenile delinquency also underline the importance of family [28]. United Nations Guidelines for the Prevention of Juvenile Delinquency (The Riyadh Guidelines) no 45/112 adopted by the United Nations General Assembly on December 14, 1990 underlines the importance of prevention of juvenile delinquency in prevention of crime and emphasizes that the principles should be implemented with a child-centred approach and of the social responsibility for the welfare of children from early ages [31].

In this study 82% of the children are illiterate and majority of them (86.5%) want to continue their education (**Table - 2**). The most important responsibility of educational institutions is to prepare children to become adults of the future. Children who are left outside of the education system, homeless children, children who are forced to work at very early ages, absence of parents are considered as the biggest disadvantages for children. A child who cannot socialize in a healthy way presents a risk both for himself and for the society in general in the future [10]. Delinquency is less common in children who are committed students [32]. It should be remembered that children who do not or cannot go to school can struggle to become skilled workers and their mental health can be negatively affected. Children who do not attend school can engage in activities that increase their potential for delinquency, and can be introduced to factors leading to delinquency by spending too much time in Internet cafes or on social media in their spare times.

Six point three percent of the children are married and 07% of the children are divorced in the study (**Table - 2**). One of the most common forms of child abuse is child marriage which means marriage of a minor. Child marriages separate children from their families and friends, lead to domestic violence and jeopardize their development and education, social and professional opportunities. Child marriage during adolescence which makes the experience more traumatic increases the risk for depression, suicide and psychological problems [33, 34, 35, 36]. Soylu and Ayaz (2013) reported that marriage at early ages causes more marital problems and leads to divorce [37]. Considering all these factors, children who are married or divorced are thought to have higher potential for delinquency than children who are not married/ divorced. Providing education and consultancy for societies and risk groups which have a

tradition of child marriages, official registration of such marriages, notification of such marriages to relevant authorities are believed to contribute significantly to protecting children health in terms of preventing delinquency and therefore protecting and improving family health.

In this study 32% of the children are sentenced for more 10 years, 31% have been staying in the prison for 12 months or longer and 38.6% were imprisoned before (**Table - 2**). Studies report that children can be more at risk of delinquency when there is an offender in the family [28, 38, 39]. It has been demonstrated that when faced with physical restraints and psychological harm caused by prison conditions, juvenile offenders are heavily traumatized and will need long term psychological therapy. Additionally when juvenile offenders are kept in the same correctional facilities with adult prisoners, they can be used for illegal business, be abused and neglected. Therefore it is very important to organize prison conditions to support development of children and protect them from risks; to protect and improve children's health during their imprisonment; to early detect and offer intervention to health problems, to include correctional care nurses in the teams using a multidisciplinary approach to detect conditions that may lead to crimes.

This study found that literacy rate in the children's families is low, more than half of the families migrated within the country, almost half of the children have an offender in their family, and 44.6% of the children have a sibling who has committed a crime (**Table - 2**). Most of juvenile offenders' parents are illiterate and work as day labourers and belong to the low socio-economic group and lack of higher education, poverty, child abuse and low socio-economic background increase the risk of committing crimes [40]. The lower the education level of parents, the more problem experienced in the child's education and development. The risk of the children who are not sufficiently supported by their parents to commit crimes also increases. When the study findings are analyzed, the parents of juvenile offenders are elementary school graduates or have very little education. Another important finding is that mothers who have more responsibility for the education and development of children as a result of the prevailing culture in the country have lower education level than fathers [28].

Lack of social security in the children's family, lack of social security of the children, unemployment and low education level have a negative impact on their access to healthcare services. This can have a negative impact on the health of children and their families, allow some diseases which can be treated when detected early to progress and make problems more complicated. Migration of a family can affect mental health of children and the family as a whole and there can be several problems caused by this situation and when a family constantly moves, the family can have problems in adjusting to new cultures and can be stigmatized and children may not be able to benefit effectively from educational, social and healthcare services. Having an offender(s) in the family indicates that children in that family are more at risk of delinquency. According to the social learning theory, social learning and imitation play an important role in causing people to commit a crime. If there is one or more people who have committed crimes in a child's family, the possibility for delinquency can increase for the child [41]. In a study which seems to support this suggestion, a highly significant relationship was found between history of crime in a family and possibility of committing a serious crime [42]. This shows the importance of home visits by public health nurses to these families at risk to monitor them and intervene as early as possible.

Majority of the children included in the study use tobacco, have alcohol or substance use problem including marijuana, cocaine and half of them volatile substances and 18.4% other types of addictive drugs (Table - 2). In the literature, tobacco use, alcohol and illegal drugs play a role in juvenile delinquency [21, 22, 25, 26, 40]. Use

of above mentioned substances causes physical and psychological harm on children's vulnerable physical and mental health leading even to death. Although tobacco products and alcohol cannot be sold to minors/ those younger than 18 years old according to the laws of Turkey [43], it seems that lack of control and inspection makes access to such substances easy. On the other hand it was found during the study that juvenile offenders in correctional facilities cut or injure themselves in order to be transferred to hospitals and go out of these facilities to have access to such illegal substances. The methods used by children to have access to illegal substances put them at risk of bleeding, infections and blood borne diseases and the illegal ways they use to have illegal substances can cause them to have legal problems repeatedly. Self-destruction in this group due to their attempts to find illegal substances is evident, therefore it is very important to provide consultancy on smoking, alcohol and substance abuse; to organize nursing interventions and education based on Transtheoretical Model for Substance Abuse; provide medication therapy and psychotherapy as required; to ensure peer support and increase internal audits in correctional facilities.

Children reported that they engage in sports, play/listen to music, read books and newspapers, draw and play computer games in their spare times (**Table - 2**). This means that when sufficient means are available children can engage in effective spare time activities and this can be a significant step in preventing crimes and taking the responsibility of one's physical and mental health. Lack of recreational areas and hobbies are reported to be one of the risk factors for juvenile delinquency [40]. Recreational areas and recreational facilities offered for the use of disadvantaged groups and people play an important role in rehabilitating and keeping them in good health. Offering enough space for people to live freely and enjoy life and job opportunities to let them have an income to lead a comfortable life in order to discourage them and keep them away from crimes and violence should be a priority for every state [44]. Effective use of spare time by the children will undoubtedly have a positive impact on their mental and physical health. Actions should be taken and programs should be organized to encourage activities that promote positive behaviour and discourage spare time activities such as computer games that can be addictive and increase their violence tendency.

The study found that 22.1% of the children do not have breakfast, 38% drink 1-3 glasses of water, 17% have decreased appetite, 22.2% have more than 3 meals a day, 20.3% believe themselves to have excessive hunger (**Table - 3**). Additionally the study found hypertension in the families of 1/4 of the children, diabetes in 17.9% of the families, kidney disease in 12.8%, cancer in 8.5% of the families and low percentage of tuberculosis and hepatitis A are also seen in the children's families. Adolescence is the transitional phase of growth and development from childhood to adulthood and fast growth and development in this phase increases the body's need for energy and nutrients so adolescents need increased amount of calories, proteins, vitamins and minerals. If this increase in need for nutrients and calories is not met due to irregular meals and skipped meals, it can cause attention disorders, reduced perception, learning difficulties and behavioural problems and insufficient and unbalanced diets can contribute to low body weight, obesity, metabolic syndrome, avitaminosis, anaemia, goitre, tooth decays, osteoporosis, hyperlipidemia, delayed sexual development, cardiovascular diseases, cancer and other chronic diseases [45]. Additionally the above mentioned diseases/disorders can be hereditary and caused by the conditions of living in the family. In addition to vulnerability of juvenile offenders, necessary screening for early diagnosis and treatment of such diseases, regular education programs about chronic diseases and protection from chronic diseases as well as protection and improvement of health can play a significant role in reducing the prevalence of these diseases.

Half of the children are reported to have sleep problems (**Table - 3**). Physical health affects many aspects of daily activities in life including committing crimes and health habits including regular exercise, sufficient amount of sleep and a healthy diet are reported to be important in healthy development of good physical health [46]. Sleep is an important part of human life and quality and sufficient sleep leads to more attention, better learning skills, better memory, quality of life, cognitive and physical health especially in children whereas insufficient and poor quality sleep results in many health problems including attention deficits, accidents and injuries, more susceptibility to infectious diseases, depression, hypertension, obesity and diabetes risk and have a negative impact on growth and development [47]. Therefore diagnosis of sleep disorders and obtaining a detailed medical history together with other physical and mental disorders, medications, alcohol and substance use and treatment of primary and secondary sleep disorders based on this information is important for children to have a healthy growth and development.

Some of the children do not have personal hygiene and self-care habits such as washing hands, brushing teeth, genital cleaning, overall body cleaning and changing underwear and other clothes regularly (**Table - 3**). Restrictions caused by security rules in the correctional facility, crowded living environment for the children and lack of privacy increase the need for healthcare services. In addition to the above, delays in medical treatment and examinations, insufficient supply of soap, clean underwear, etc. affect the health of the children and even personal items are shared between children which leads to spread of infectious diseases. Additionally when juvenile offenders cannot perform their personal hygiene due to the conditions of correctional facilities, this can have a negative effect on their physical and mental health and can even increase infectious diseases risk. Therefore it is believed that regular education programs for children in correctional facilities can contribute significantly to creating behaviour changes to protect from infectious and non-infectious diseases, to protecting and improving health and that correctional facilities provide a good opportunity to give education on health.

Children included in the study reported that they experience stress due to problems with their friends, being in a correctional facility, not being able to see their families, court days, and to a lesser extent due to money problems. Children cope with stress by being patient, by not trying to think about stressful things, performing religious rituals, and by inflicting self-harm or causing harm to other people and damage to objects. Another important finding is that the children want to inflict self-harm and harm others (**Table - 4**). In their study in adolescents, Moore, Gaskin and Indig (2013) found that 8 out of 10 people had at least one psychiatric diagnosis and approximately 25% were diagnosed with post-traumatic stress disorder and a higher percentage of children who committed theft offenses had depression [48, 49]. These findings demonstrate that creating an environment that supports mental health to observe and follow children closely and perform early diagnostic procedures and offering proper treatment to those with diseases and ensure adjustment to the environment is necessary.

Half of the children included in the study reported that they feel healthy, 25.6% partially healthy and 17.3% reported that they do not feel healthy (**Table - 5**). Children in custody have unmet healthcare needs and majority of juvenile offenders are reported to be healthy [40, 50]. The World Health Organization defines health as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. The concept of health is addressed objectively and subjectively which means that the individual feels physically, mentally and socially healthy [51]. In this study children think that they are not healthy or they are partially healthy which can mean that they are at risk of not being able to protect and improve and be responsible for their health. Therefore creating awareness on the protection and improvement of

children's health, increasing health literacy, taking actions about early diagnosis, final diagnosis, health education and follow up on health are believed to contribute significantly to ensuring healthy living for the children.

Juvenile children are mostly from disadvantaged families and they are faced with complicated and traumatic events in their lives such as crimes and this can trigger some mental problems or cause some existing mental problems to surface. In a study conducted in juvenile offenders, 85% of the children included in the study had a chronic mental disorder and the most common disorders were behavioural disorders, personality disorders, substance/alcohol abuse, adjustment disorder [52].

Based on the physical examinations done during the study, 3.8% of the children have high systolic blood pressure (**Table - 5**). Therefore regular measurement of blood pressure of the children who have a family history of hypertension, closely following the children who deviate from the norm are believed to contribute significantly to preventing or early diagnosis and treatment of chronic diseases associated with hypertension, and protecting and improving children's health. In the study 16.5% of the children are overweight and 1.9% are obese (**Table - 5**). Studies in the literature show that there is a close relationship between obesity and hypertension [53]. Based on this information it is important that children in correctional facilities are screened regularly and their vital signs and weight and height are noted, any potential hypertension and obesity is diagnosed, education programs on the importance of diet and exercise to prevent these conditions are organized and medical treatment and care is provided to the children who are diagnosed with hypertension and obesity.

Based on the findings of the children's medical examinations many health problems were detected including paleness, itching, scar tissue caused by cuts, hair loss, decayed and missing teeth, dyspnoea, cough, sputum, haemoptysis, palpitation, chest pain, heartburn, hand tremors, dizziness, absentmindedness, nail biting, pain when urinating, low back pain, scoliosis, impaired vision, colour blindness, hearing problems, ear pain, nose bleeding and deviated septum (**Table - 6**). Correctional facilities /prisons are environments where prisoners often have many serious health and personal problems [54]. At the same time, correctional facilities provide an opportunity to determine prisoners' health and to provide health education and improve health. A multidisciplinary team work is needed for healthcare workers to provide quality and equal healthcare to prisoners. The study findings indicate the importance of early diagnosis, screening and periodic examinations for early detection of some diseases in prevention of potential progress of these diseases. In the literature, the American Academy of Pediatrics, in their statement for Health Care for Youth in the Juvenile Justice System reported that high-urgency dental problems defined as infection, tooth or jaw fracture, pulpitis, or severe periodontal disease with bleeding were found in 6.2% of the subjects and moderate-urgency conditions, including cavitated asymptomatic decay or moderate gingivitis were found in 13.1% [55] However in this study haemoglobin levels could not be tested due to lack of necessary permits. A study on a similar topic found that a minority of juvenile offenders were anaemic (26%) and 43% of the children had skin infections, 95% had normal pulse rates, 98% had normal blood pressure and respiratory rates. The same study found that 1.71% had eye problems, 0.56% had hearing problems 6.29% had fever, 4.57% had sexually transmitted diseases and 9% had acute respiratory tract infection and 64% had a normal body mass index and 30% were underweight and only a few were overweight [40].

Conclusion

Based on the findings, the study determined that juvenile offenders in correctional facilities are from disadvantaged families, and have several risk factors that can have a negative effect on their health depending on their development

stage and conditions of living and their health problems mostly include substance abuse, stress and stress coping, dermatological problems, oral health, respiratory system, urinary system and mental problems. The findings of the study demonstrate that healthcare needs of the children in correctional facilities are very high; that correctional facilities should be accepted as a unique opportunity to reach to disadvantaged groups and individuals, children, as future adults are one of the most important factors to build a healthy community and public health services which include screening, advanced diagnosis and treatment under the framework of primary healthcare is very important to protect and improve children's health, to treat and cure diseases. Therefore in order for juvenile offenders in correctional facilities to return back to the society healthier and with more positive attitude and behaviour and to protect and improve their health and to ensure early diagnosis, treatment and rehabilitation, effective healthcare services under the framework of public healthcare services in correctional facilities should be provided at primary, secondary and tertiary protection levels with a holistic and multidisciplinary team approach. Developing tools to identify families in which children are at risk of delinquency, providing constant monitoring and consultancy services, to review and revise family, society and institution based policies at the earliest time possible are important to protect and improve children's health. Furthermore integration courses about juvenile offenders and delinquency in nursing curriculums will create awareness among nursing students about this and provide guidance for them when planning healthcare and nursing services. It is concluded that further qualitative and quantitative studies with larger samples which will include also female children and concentrate on juvenile offenders and their health problems can make a significant contribution to the literature.

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Limitations of the Study

Questions about income levels and the reasons for them to be in correctional facilities could not be asked and interventional procedures such as measurement of haemoglobin levels could not be performed. Female juvenile offenders in female correctional facilities could not be included in the study so the sample group was only limited to male juvenile offenders.

Disclosure

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