Original Research Article

The Determination of Health Needs and Healthy Lifestyle Behaviours of Women Prisoners

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Abstract

Background: Today the prisoners' numbers are increasing. So this problem is being discussed in terms of prisoners' health and their health needs. Because the person who stay in the prisons are vulnerable at helath-related issues, because of limited conditions and health facilities.
Aim: The aim of this study is to assess the health needs and healthy life behaviors of women prisoners in prison.
Materials and methods: The research was carried out as descriptive. The sample of the study consisted of 106 women. Data were collected using women's health and physical assessment form and Healthy Lifestyle Behaviors Scale-II (HLSBS-II).
Results: The average age of women was 34.66±10.54 and the average length of their stay in prison was 36 months. 25.5% of the women were illiterate, 47.2% of the women convicted for offenses against life, 22.6% of the women were found at prison in the past. The results also demonstrated that the women had suffered from an illness prior to their stay at prisons (66%). 45% of the women had an accident or got injured in the past, and 58% of the women were exposure to physical violence. The women's average of HLSBS scores were found low (105.61±22.13). (105.61±22.13).
Conclusion: The results of the study revealed that in terms of health services the women prisoners' needs for healthcare services are too much and healthy lifestyle behaviors are insufficient.

Key words

Prison, Female Prisoner, Healthy Lifestyle Behaviours, Public Health Nursing.

Introduction

In September 2015, the international community has adopted 17 goals and 169 targets as a part of the 2030 Sustainable Development Agenda to replace the Millennium Development Goals (2000-2015). Among the SDGs, the "Goal 5: Achieve gender equality and empower all women and girls" is considered to be associated with women prisoners. Discrimination of women comes in many different forms in criminal justice systems, during the penalization and incarceration processes, including gender-specific offenses and neglecting gender-specific conditions and needs. Most of the systems disregard the connection between violence against women and criminality of women and they are insufficient for protecting women from violence in prison. Although there are efforts to address gender inequality, women prisoners and offenders have been neglected to a great extent [1].

Doha Declaration promotes states to take gender-specific measures as a part of their policies on crime prevention, criminal justice and treatment of offenders, however, according to the World Female Imprisonment List provided by Institute for Crime & Justice Policy Research which compiled the latest data by the year 2015 reported that around the world, 700.000 women and girls are held in prisons. Despite the fact that the general prison population has been increased by 18% since the year 2000, the number of imprisoned women and girls has been increased by 50% [1]. The majority of imprisoned women and girls are raised by socially, economically and culturally disadvantaged families who constitute a risk group in terms of health and they are difficult to be reached outside of the prisons. [2, 3]. The negative impacts of previous adverse experiences on prisoners' physical and mental health, overcrowding in prisons, isolation of individuals and violence-related problems also exacerbate the health problems of women [4, 5]. The most common health problems included substance-use disorders, committing an offense of violence, being exposed to violence, mental illnesses, chronic diseases and reproductive health problems [6]. Particularly, it has been reported that women's physical health conditions are negatively affected during incarceration in prisons and their health problems had been worsened [5]. The findings indicated that more than half of the applications to health care services (57%) are caused by new problems and these findings supports the fact that physical health problems of prisoners had been increasing [4, 7]. It is also reported that chronic illnesses were more prevalent among prisoners compared to other members of the society, and it was found that prisoners had poorer physical conditions [8]. A research study found that more than two-third of the prisoners (64.6%) suffered from at least one disease such as hypertension, asthma, diabetes, ischemic heart diseases, chronic obstructive pulmonary disease (COPD) or cerebrovascular diseases (CVD), and another study reported that more than half of the prisoners (52%) suffered from at least one chronic illness [9]. Musculoskeletal system and connective tissue diseases, circulatory system diseases, mental illnesses, and respiratory system diseases, dental health care problems were among the prevalent problems among prisoners [10, 11, 12]. In particular, women prisoners suffered from cervical cancer, asthma and diabetes, malnutrition and impacts of lack of exercise and smoking more than other women in the society [8, 11, 13, 14]. Moreover, women prisoners reported their health problems more frequently, however these problems did not draw enough attention [15]. The health problems of women prisoners that appear in prisons emerge due to previous life experiences, primary care before prisons, diseases prevention, lack of opportunities to benefit from early diagnosis services and lack of preventive health care behaviors [14, 16, 17]. Prisons offer an exceptional opportunity to provide preventive health care to these women, who exhibit high-risk behaviors and previously received insufficient medical care and an opportunity to improve their health [16].

When the researches are examined, the key issue is seen that the incapacity of the Prisons to enable individuals to access health care services at an expected level. Most prisoners are not able to access health care services, and the prisoners who have an access receive medical care from nurses [4, 7, 17-19]. Nurses are the main providers of primary health care and the backbone of primary health care in prisons. [20]. At this point, it could be argued that nurses have key roles in prisons. The aim of this study is to provide an assessment approach towards the health needs and healthy lifestyle behaviours of women prisoners in prisons.

Materials and methods

Study Design

The research was conducted as a descriptive and cross-sectional study.

Participants

The study sample consisted of 106 women whose informed consents were obtained to participate in the study. The purpose of the study was explained to the social service workers and medical officers in the infirmary and afterward women were interviewed and their voluntary participation was ensured. Certain descriptive characteristics of women prisoners are provided in **Table - 1**.

Instruments

Data for this study were collected using the women's health and physical assessment form developed by the researcher and Healthy Lifestyle Behaviors Scale-II (HLSBS). The data were obtained by using face-to-face interviews and as a result of an assessment process lasting 60 to 90 minutes.

1. Women's health and physical assessment form is based on the literature and comprised of seven sections and includes socio-demographic characteristics and introductory information. The first section includes questions on socio-demographic characteristics and general information (age, level of education, place of birth, civil status, type of family, number of children, economic status, type of offense, sentence length, length of stay in CIs, the status of being incarcerated in prisons; place of residence, employment status, monthly regular income, health insurance status prior to prisons). The second section includes questions on the history of health, family history, current status of health and health behavior. The third section collected information to determine daily life activities (physical activity, sleep and rest, nutrition and hygiene), preventive health care behaviors and behaviors to be improved. The fifth section includes questions to determine the risk factors for women's health such as menarche age of women, age of marriage, number of pregnancies, number of miscarriages, number of abortions, and age of menopause. The sixth section includes questions to determine the sexual health behaviors and examines women's status of having routine and preventative tests regularly. The seventh section includes a system assessment form which is a diagnosis form comprised of vital signs, body-mass index (BMI) and physical symptoms based on notifications of individuals. The form reviews the symptoms concerning all systems.

2. The Healthy Lifestyle Behaviors Scale (HLSBS) is the first version of the Healthy Lifestyle Behaviors Scale, which was developed by Walker, Scherist and Pender, and consists of 48 items in total [21]. The second version of the scale (HLSBS II) which consists of 52 items was developed by Walker and Hill-Polerecky by adding four items [22]. This scale consists of six sub-dimensions and 52 items: health responsibility sub dimension (items 3., 9., 15., 21., 27., 33., 39., 45. and 51.), physical activity sub dimension (items 4., 10., 16., 22., 28., 34., 40. and 46.), nutrition sub dimension (items 2., 8., 14., 20., 26., 32., 38., 44. and 50.), moral development sub dimension (items 6.,12.,18.,24.,30.,36.,42.,48. and 52.), interpersonal relationships sub dimension (items 1., 7., 13., 19., 25., 31., 37., 43. and 49.) and stress management sub dimension (items 5., 11., 17., 23., 29., 35., 41. and 47.). The items of the

scale have a positive connotation. In the scale, the answer "Never" is scored with 1 point, "Sometimes" is scored with 2 points, "Frequently" is scored with 3 points, and "Regularly" is scored with 4 points. The overall score of the scale is the HLSBS II score. The scale scores range between 52 and 208, and the upper and lower limits of the sub-dimensions of the scales range as follows: health responsibility between 9 and 36, physical activity between 8 and 32, nutrition between 9 and 36, moral development between 9 and 36, interpersonal relationships between 9 and 36, and stress management between 8 and 32. A higher score obtained from the scale indicates a higher level of healthy lifestyle behavior The Turkish reliability and validity study of the scale was conducted by Bahar et al. (2008), [22]. The Cronbach Alpha coefficient of the scale was 0.92 and the equivalence between the Turkish version and the original English version was (Kendal W: 0.188, p: 0.246) [23]. The health-promoting behaviors of women were assessed by Bahar et al. (2008) by using HLSBS-II whose Turkish validity and reliability study was previously conducted [23]. As a result of the research, the Cronbach Alpha coefficient of the scale was found as 0.91.

Data Analysis

The statistical analysis of the data was performed with a statistical package program. The statistical significance level was accepted to be $p<0.05$ In the analysis of data number, percentage, mean, standard deviation, median, minimum and maximum were used for descriptive statistics.

Ethical Considerations

Prior to the study, the necessary permit was obtained from the Ministry of Justice, and ethical committee approval (Institutional Review Board Dated 2012 February 29, and Institutional Review Board Number: 431-1132) was obtained from an ethical committee of a university. Before including individuals to the study, the purpose of the study was explained to them and their written consents were obtained. The research complied with the Declaration of Helsinki.

Results

The analysis socio-demographic characteristics of the woman prisoners established that 20.8% of the women were in the age group between 30 and 34 years, 7.5% of them were born in another country, 25.5% of them were illiterate, 25.5% of them were divorced and 24.5% of them had a child (**Table - 1**). The current study found that the majority of the women (57.5%) were working prior to their incarceration in prisons, most of the women were unqualified workers/had daily jobs (40.6%), 70.8% of them did not have a monthly regular income and 62.3% of them did not have a health insurance (**Table - 1**). **Table - 1** illustrates that women prisoners in prisons were typically young, have fragmented families, low educational and socioeconomic levels, had unqualified jobs and did not have health insurance. Within society, women who have these characteristics constitute a risk group in terms of public health and crime prevention. Therefore, identifying the criminal tendencies in these women and rehabilitating them is of the most importance to enhance health care services and reducing crime rates in society. Today, prisons should be addressed as places that improve health given that women prisoners interact with health care services only in prison. The current study examined the crimes committed by the women prisoners and found that nearly half of the women (47.2%) were serving time in prisons for offenses against life, which was followed by causing injury to other person (17%), and offenses against public health (17%) (**Table - 1**). The results of the study established that 42.5% of the women were sentenced to 60 months or more and 37.7% of them were incarcerated in prison for less than 12 months.

Table – 1: Descriptive Characteristics of Women.

Characteristics	**n**	**%**	**Characteristics**	**n**	**%**
Age (Year)			**Status of Employment Before Incarceration in Prison**		
24 years old and below	17	16.0	Unemployed	45	42.5
25-29	19	17.9	Employed	61	57.5
30-34	22	20.8	Type of Works Women Had Before Prisons		
35-39	18	17.0	Qualified Jobs (Teacher, Nurse, Banker, Notary etc.)	7	6.6
40-44	12	11.3	Daily Jobs (Selling handkerchief, Making handcrafts, Garbage Collection etc.)	43	40.6
45 years old and above	18	17.0	Sex Worker	11	10.4
Place of Birth			**Status of Having a Regular Income Before Prison**		
Province	46	43.4	Had No Income	75	70.8
District	27	25.5	Had Income	31	29.2
Village	25	23.6	Having a Health Insurance Before Prisons		
Another Country	8	7.5	Yes	40	37.7
Level of Education			No	66	62.3
Illiterate	27	25.5	**Offenses of Convicted/Arrested**		
Literate	6	5.7	Against Life	50	47.2
Primary School First Stage	26	24.5	Against Property	18	17.0
Primary School Second Stage	27	25.5	Against Public health	18	17.0
High School and Above	20	18.9	Against Public morals	6	5.7
Situation Before Incarceration in Prison			Against Public administration and businesses	3	2.8
Never Married	12	11.3	Migrant Smuggling and Human Trafficking	3	2.8
Married	25	23.6	Against Liberty	2	1.9
Widowed	15	14.2	Abuse of Confidence	1	0.9
Divorced	27	25.5	Status of Being Incarcerated in Prisons In the Past		
Living Separately	14	13.2	No	82	77.4
Living Together Without Civil Marriage	13	12.3	Yes	24	22.6
Status of Children (n:81)			**Total Sentence Length**		
1	26	32.0	12 Months and Less	21	19.8
2	22	27.2	12-59 Months	23	21.7
3	13	16.0	60 Months and More	45	42.5
4 or more	20	24.8	Total Length of Incarceration Until Now		
Income Status			12 Months and Less	40	37.7
Had No Income	75	70.8	12-59 Months	39	36.8
Had Income	31	29.2	60 Months and More	27	25.5

Table - 2 provides information on the previous medical histories of women. The findings of the study showed that 66% of the women had suffered from an illness in the past. Among these health problems, nervous system diseases were the most frequently reported problems with 12%, and it was followed by endocrine, nutritional and metabolic diseases, and circulatory system diseases with 11%, the third most common disorder was respiratory system diseases with 9.1% and mental and behavioral disorders had fourth-place with 7.1%. The results of the study reported that the rate of women who experienced an accident or injury was 45.3%, and 58% of these women were exposed to physical violence (battery), 44% of them had a surgical operation and the number of women who experienced difficulty and disability due to other conditions was 11. The results of the study reported that the rate of women who experienced an accident or injury was 45.3%, and 58% of these women were exposed to physical violence, 44% of them had a surgical operation, and the number of women who experienced a difficulty and disability due to other conditions was 11 (**Table - 2**).

Table – 2: Findings on Women's Previous Health Status (n:106).

Status of Suffering from an Illness in the Past	**n**	**%**
No	36	34.0
Yes	70	66.0
Medical Diagnosis Related Illness in the Past*		
Genitourinary System Diseases	7	4.5
Endocrine, Nutrition and Metabolic Diseases	17	11.0
Digestive System Diseases	9	5.8
Infectious and Parasitic Diseases	5	3.2
Respiratory System Diseases	14	9.1
Nervous System Diseases	19	12.0
Respiratory System Diseases	17	11.0
Mental and Behavioral Diseases	11	7.1
Breast Related Diseases	5	3.2
Musculoskeletal System and Connective Tissue Diseases	5	3.2
Blood-forming Organs Diseases and Immune system Disorders	3	1.9
Eye Diseases	2	1.3
Skin and Subcutaneous Tissue Diseases	2	1.3
Neoplasm (Colon)	1	0.6
Total*	154	100.0
Status of Experiencing an Accident/Injury in The Past		
No	58	54.7
Yes	48	45.3
Types of Accidents and Injuries Experienced in The Past (n:48)		
Physical Violence	40	58.0
Traffic Accident	10	14.5
Being Stabbed	11	15.9
Being Shot	3	2.9
Burns	3	4.3
Falling Down	2	4.3
Total*	69	100.0
Status of Having a Surgical Operation in the Past		

No	59	55.6
Yes **	47	44.4
Status of Experiencing Difficulties and Disabilities due to Previous Health Problems (n:47)		
Limited Joint Mobility	6	54.5
Hearing Loss due to Tympanic Membrane Perforation	3	27.3
Plegic Left Arm and Sickle-Walk in Left Leg	1	9.1
Uterine Prolapse	1	9.1
Total*	11	100.0

* Percentage values were calculated by using the total.

**Surgical Operations underwent by women (sex reassignment surgery; face, breast, nose remodeling; symptomatic prolapse surgery (uterine prolapsus); nephrolithotomy, appendectomy; removal of atheroma plaques in carotid arteries; surgery to fix a broken arm and leg bones using metal screws, surgeries towards injuries (after being shot, stabbed), eye operation.

The findings of the study showed that 51.9% of the women prisoners were diagnosed with an illness after their arrival in prisons. Among these diagnosed illnesses, circulatory system diseases were the most frequently reported diseases with 28.6%, which were followed by mental and behavioral disorders. The rate of nervous system diseases was found as 20.6% and the rate of respiratory system diseases was found as 11.1%. According to the findings showed that 44 individuals who were diagnosed also were on medication. The rate of women who had suffered from undiagnosed complaints was 55.7%. The rate of women who confront difficulties to access health care services was 40.6% (**Table - 3**).

Table – 3: Findings on Current Health Status.

Status of Having an Illness Currently Diagnosed		
No	51	48.1
Yes	55	51.9
Diagnosed Illnesses *		
Circulatory System Diseases	18	28.6
Mental and Behavioral Diseases	14	22.2
Nervous System Diseases	13	20.6
Respiratory System Diseases	7	11.1
Endocrine and Metabolism Diseases	4	6.4
Breast Related Diseases	4	6.4
Infectious and Parasitic Diseases	2	3.1
Neoplasm (Breast)	1	1.6
Status of Being on Medication		
No	11	20.0
Yes	44	80.0
Status of Suffering from Undiagnosed Complaints		
No	47	44.3
Yes**	59	55.7
Status of Confronting Difficulties to Access Health Care Services		
No	63	59.4
Yes	43	40.6

* Percentage values were calculated by using the total given that one prisoner had more than one diagnosis.
** Problems related to mouth and dental health, vomiting after eating, chest pain, high blood pressure, stomach problems, abnormal menarche problems, uterine prolapsus, mouth dryness etc.

Table - 4 shows that 6.6% of the women experienced menarche before the age of 12, 60.2% of the women married before the age of 18, 59.4% of the women became pregnant for the first time before the age of 18, and 8.5% of them had more than one partner.

Table – 4: Distribution of Reproductive Health Characteristics (n:106).

Menarche Age	**n**	**%**
12	7	6.6
12-15 Years Old	90	84.9
16 Years Old and Above	9	8.5
Age of Marriage		
18 Years old and Below	50	60.2
18 Years old and Above	33	39.8
Age of First Sexual Intercourse		
18 Years old and Below	57	59.4
18 Years old and Above	39	40.6
Number of Sexual Partners Before Incarceration in Prison		
No Sexual Relationship	33	31.1
Single Partner	64	60.4
More Than One Partner	9	8.49
Status of Using Contraceptives Before Incarceration in Prison		
No	45	61.6
Yes	28	38.4

The average of the total scale score of the women was found as 105.61±22.13 (**Table - 5**). The physical activity was the lowest average scale sub-score group with 11.14±4.86, it was followed by nutrition with 15.29±5.10, by health responsibility with %15.60±5.63 and by stress management with 16.33±3.90. The results of the study showed that stress management score averages, which is a sub-dimension of HLSBS-II, were also low. The given results were considered as explanatory towards women's drug-abuse trends (**Table - 5**).

Table – 5: Distribution of Healthy Lifestyle Scale II Score Averages and Findings on Women's Daily Life Activities and Health Improving Behaviours.

HLSBS II Scale Sub-Dimensions	Mean±Standard Deviation	Min-Max	Lower and Upper Limits of the Scale
Health Responsibility	15.60±5.63	9-28	9-36
Physical activity	11.14±4.86	8-28	8-32
Nutrition	15.29±5.10	9-30	9-36
Moral Development	24.55±5.66	9-36	9-36
Interpersonal Relationships	22.67±5.48	9-35	9-36
Stress Management	16.33±3.90	8-25	8-32
Total	105.61±22.13	52-166	52-208

Health improving behaviors of the individuals were analyzed by using HLSBS II and the distribution of the scale scores were provided in Table 6. The second sub-dimension with the lowest score among the HLSBS II scores of the women was the health care supervision (**Table - 6**).

Table – 6: Findings on Women's Daily Life Activities and Health Improving Behaviours (n: 106).

Nutrition	**n**	**%**
Status of Eating the Food Provided by the Institution		
No*	41	38.7
Yes	65	61.3
Food Groups Consumed by Women		
Dairy Products		
No Consumption	26	24.5
Insufficient Consumption	80	75.5
Consumption of Meat		
No Consumption	24	22.6
Insufficient Consumption	82	77.4
Consumption of Bread and Grains		
No Consumption	6	5.66
Sufficient Consumption	44	41.5
Over Consumption	56	52.8
Consumption of Fruits and Vegetables		
No Consumption	32	30.2
Insufficient Consumption	74	69.8
Daily Fluid Intake		
Less than 2000 ml	89	84
More than 2000 ml	17	16
Sleep Patterns**		
Difficulties to Fall Asleep	57	44.2
Interrupted Sleep	72	55.8
Status of Physical Activity		
Yes (taking a walk)	12	11.3
No	94	88.7
Leisure Time Activity		

Yes (reading books. watching TV. painting)	58	54.7
No	48	45.3
The Status of Using Drugs		
Yes (cigarettes)***	68	64.2
No	38	35.8
Body Mass Index Values of Individuals		
Normal	42	39.6
Underweight	19	17.9
Slightly Overweight	28	26.4
Obese	13	12.3
Highly Obese	4	3.77

Discussion

Women were incarcerated in prisons during their young adulthood and middle adulthood periods, and the majority of them had a low level of education [6, 24, 25]. One-fifth of women were in the age group between 30 and 34 years and the given situation indicates that these women had spent the most precious and productive years of their lives in prisons. Therefore, preventive health care services that need to be provided by considering women's low levels of education may assist in the prevention or early diagnosis of potential chronic illnesses. This approach may lower the costs of treatment and medication in prisons and ensure that these individuals will not return the society as individuals with chronic illnesses and in this way, the number of individuals in the society with chronic illnesses will not increase. The given situation will also prevent an increase in the health care costs of society.

Another study found that women prisoners are divorced or lived separately from their spouses [26-28]. The research study which examined the impact of prisons on the risk of cardiovascular disease for women in England, who are incarcerated in prisons short recently, reported that only one-third of the women (35.8%) were married or live with a partner [29]. The study revealed that 23.6% of the women were married and 12.3% of them were living with their partners. These results support the findings of Plugge et al. [27]. Another important finding was that 24.5% of the women had one child, and 20.8% of the women had two children. These findings indicate that more than half of women prisoners leave one child or two children alone in society. This situation appears as a critical issue.

The results of the study highlight that each women incarcerated in prisons leaves a child behind who must in need of care. Many women prisoners are placed in prisons which are very far from their place of residence. Many of these women still have a responsibility to provide care for their children. When a woman is arrested, she is mainly disconnected from her family and as a result, alternative caregivers and state institutions take the responsibility of the children who need care. Place of incarceration which is far from the hometown may also create problems when prisoners return home after being released from prison. Placing women in prisons that are close to the hometown of women and enabling women to maintain their relationship with their children is an issue to be highlighted. The aforementioned factors should be taken into consideration in terms of rehabilitation of women and to help them to adjust their life after prison.

The study which analyzed the opportunities to improve women prisons in Queensland found that more than half of the women (50.5%) were not working prior to their incarceration [13]. The review of Eliason [26] pointed out that 40% of the women were employed before incarceration and 37% of them had low income [28]. The study was conducted with women prisoners in the Isfahan Central Prison reported that 18.4% of them were illegal works in the past [25]. The

results of the study showed that 10.4% of the women were manual workers [25]. Another study revealed that only 18.7% of the women were employed and 27% of them were illegal manual workers [29]. Moreover, majority of the women (31.8%) did not have their own income, and also 48% of the women had families with no income [30]. The same study also reported that 7.1% of the women were unemployed and 10.6% of them were stealing for living [30]. A research study conducted in Brazil revealed that 65.2% of the women had monthly incomes lower than minimum subsistence level [31]. A study which aimed to demonstrate the relationship between the prevalence of behavioral risk factors of women prisoners in Oregon district prison and poor health conditions reported that 43% of the women engaged in sexual intercourse for money or for drugs [32]. The results of a study conducted with 100 women prisoners in a prison located in Rhode Island to examine the preventative health care needs of women prisoners demonstrated that 56.0% of them did not have any health insurance prior to incarceration [16]. Çaglar, et al. [23] found that the most common crime committed by women was homicide or causing injury to other person (35.3%) [30]. These results are similar to those reported by studies conducted in Turkey, yet differ from statistics of other countries. The results of the longitudinal study conducted by Grella, et al. [32] on prison-based treatment motivation among women prisoners along prison life and after release from prison established that women prisoners are more likely to commit offenses against property compared to men (34.6% and 18.3%), drug-related offenses (24.3% and 16.5%), and crimes of violence (35.2% and 56.9%), and women engage in different types of crime [33]. This difference emerges between the results of the study and the results of the studies conducted in other countries can be explained with the fact that the phenomena of crime vary between countries. The given results also emphasize the possibility that these women might be exposed to physical violence before their incarceration in prisons. In line with the findings of the study which indicated that the majority of the women committed offenses against the person and they were incarcerated in prisons for the first time lead to the conclusion that 'violence breeds violence'. During the interviews conducted by the researcher, one woman prisoner stated "I had been beaten for 20 years, one day he beat me again, but I run out of patience and I killed my husband. I don't regret it". At this point, the given expression sheds a light to the relevant discussion.

Aktürk [33] reviewed the decided case files dated between 2000-2006 in criminal courts for the study based on women who committed crimes of violence in the scope of the courts of justice located in three large districts of Bakırköy, Eyüp and İstanbul, in the face of the increase in crime rates stemmed from the economic crises which had started in the second half of the 1990s [34]. The study also identified that the most common offense committed by women was homicide. Homicide was followed respectively by robbery, causing someone's suicide and sexual violence. Among the cases in the Criminal Court of First Instance causing injury to another person was the most common offense. The second most common type of offense identified in the review of the cases of the Criminal Court of First Instance was begging and the fifth most common offense was prostitution; all cases on these two offenses were committed against family members. On the other hand, women mostly committed extortion and blackmailing offenses against other women. Deprivation of liberty was an offense which was committed by mothers and grandmothers, and it was associated with domestic violence. Physical assault was an offense that was committed by women between 18 and 22 years against younger individuals. The offense of torture was committed against women victims in district prisons and police stations, and sexual offenses were committed against children younger than 15 years of age. Torment was also an offense which stemmed from domestic violence, and it committed against women victims who were younger than the perpetrator. Illegal abortion was also an example of an

offense that the victim had kinship with the perpetrator [34].

The study conducted by Agaoglu-Canay [34], which examined the criminality of women in the context of the experience of femininity, established that each offense caused by different reasons and forms, yet the study showed that the common point of these offenses was the association with the experience of womanhood. For example, the issue of homicide that has an important place in terms of criminality of women should be addressed along with the concept of 'battered women'. Certain offenses including theft, defalcation, fraud and forgery were closely associated with the place of women in the public field and it should be addressed in line with these variables [35].

The increasing trend in female criminality can be explained to a certain extent with the women's increasing participation in socioeconomic life. The active participation of women in economic life and the principle of equality before the law have paved the way for women to ensure their role in the social life, and as a result, women have started to confront social facts more actively. As a result of their participation in social and economic life, women have started to confront the concept of criminality more frequently. Another important reason that pushes women into crime is the economic inequality in Turkey. Economic reasons are important factors that lead both women and men to commit crimes [35, 36]. However, explaining the concept of women criminality only by addressing the economic aspect is an insufficient approach. Although legal regulations provide equal opportunities for both women and men; in practice, legislative acts are not implementing actively, and this situation led to the conclusion that women's rights are relatively violated in the society [37]. In this context, when a woman's rights are violated, she might resort to crime. Indeed, in Turkey women commit offenses against the person more frequently than other groups of offenses [37]. Perpetrators of homicide mostly stated that they were victims of domestic violence and the majority of them committed firearm-related homicides at close range. Thus, the ongoing and new campaigns on preventing domestic violence should highlight the idea that 'violence breeds violence' since discussing this issue might inform women on methods of reconciliation and conflict resolution and be very beneficial in terms of preventing crimes of violence.

Given that the women will stay in prisons for a longer time, the aforementioned situation might lead to higher health-related, social and economic costs. In this context, it can be argued that the time that women spend in prisons should be used more efficiently, and women should sanction should be imposed on prisoners outside of prison. The study conducted by Nokhodian, et al. [30] pointed out that 79.5% of the women were incarcerated in prisons for the first time [25]. The findings of the study also indicated that the majority of the women were incarcerated in prisons for the first time (77.4%). According to the study, even the women who were in the prisons for the first time experienced worse health status compared to the population that was not incarcerated and suffered from health problems more frequently.

Lindquist and Lindquist (1999) pointed out that 48% of the women confront great difficulties to access care [4]. The research study also stated that 40.6% of the women face difficulties to access health care services (**Table - 3**). The given finding of the study was also supported by the - "Prison and Right to Health" Advisory Committee for Prison Prisoners with Cancer 2009 Report- published by the Turkish Medical Association (TMA) (2012) [45]. The complaints made by individuals to TMA about the health care services provided in prisons included: delay in diagnosis and treatment, difficulty in seeing a doctor, mistreatment of doctors, difficulties in accessing medication and other medical care products and lack of access to health care services that are just [45]. The results of the study and the TMA Central Council on Ambulatory Care also included complaints

about; lack of constant health care provision by a doctor, difficulties to access general health care and dental care, delays in referral to hospital, long waiting time in inappropriate prisoner transport vehicles, handcuffing patients during physical examination and treatment, presence of security forces in the examination room, lack of privacy and improper attitude of the health care professionals [45, 46].

The results indicated that most of the women committed certain offenses such as homicide and causing injury to another person to protect themselves. Such kind of crimes mostly committed by women who were mistreated and exposed to different types of violence and they occurred as a result of an unplanned acute reaction. In such kinds of crimes, violence against women constitutes a very significant problem despite there is evidence of using domestic violence. Because, in such cases, women resort to violence to protect themselves from their husbands and avoid battery. The given situation leads to the questions of if the woman is a victim or perpetrator. From another perspective, it can be assumed that women might be initiated to commit such crimes, given that they were incarcerated in prisons for homicide. This situation highlights the importance of analyzing the tendencies of women in committing an offense and improving the conditions. At this point, the need for identifying individuals in advance with the public health approach and preventing women from becoming criminals is essential (38,39). The results of the study demonstrated that more than one-fifth of the women (22.6%) were incarcerated in prisons in the past and the given situation suggests that criminality of women is not solved in the social structure and therefore, the women repetitively return to prisons.

The study indicated that the most common health problems that women had before incarceration in prisons were nervous system diseases and they were followed by diagnoses related to endocrine, nutritional and metabolic diseases and circulatory system diseases. On the other hand, the most frequently reported diseases after women's incarceration in prison included circulatory system diseases in the first place, and they were followed by mental and behavioral disorders. The given results of the study might lead to the conclusion that these findings are related to the health problems that were not diagnosed after women's incarceration in prisons. A research study that examined the prevalence of non-infectious chronic diseases in prisons located in Texas revealed that nearly one-fourth (24.5%) of the individuals suffered from a chronic illness [40]. The same study also demonstrated that 18.8% of the prisoners had hypertension, 5.4% of them had asthma, 4.2% of them had diabetes, 1.7% of them had ischemic heart diseases, 0.96% of them had COPD and 0.23% of them had CVD [40].

A research study which examined the cervical cancer risks in the Criminal Justice System revealed that chronic illnesses of female prisoners were significantly higher than male prisoners [51]. A document review study conducted on a district prison in Western Australia reported that 52% of the prisoners suffered from at least one chronic illness [40]. The research study conducted by Lindquist and Lindquist [5] to examine the physical health of 198 male and female prisoners indicated that prisoners' physical health problems had gradually increased during incarceration [4].

Plugge and Fitzpatrick [27] used the S-36 form in their research study and found that women's physical and mental health conditions were worse in comparison to the general population [41]. Another study compared physical and mental component scores of women prisoners with the general population and found that women prisoners' scores were lower [42]. In addition, despite the fact that the status of mental well-being of 112 women prisoners who were incarcerated in the three months period was lower than the general population, women's status of well-being was improved during incarceration [43]. However, women's physical health conditions remained lower than the

general population [43]. Based on the results of the study it can be argued that women prisoners' physical and mental health problems had exacerbated during their incarceration in prisons. Furthermore, only 3.0% of the women prisoners stated that they had a medical history of diabetes, yet the study found that the rate of the women who had diabetes was two times higher than the stated rate [44]. The study conducted by Wilper, et al. [17] on the prevalence of chronic diseases, including mental health problems, and found that 38.5% of the prisoners incarcerated in the prisons of the USA, 42.8% of the prisoners incarcerated in district prisons, and 38.7% of the prisoners incarcerated in local prisons suffered from at least one chronic disease [18]. As emphasized by the literature, women's symptoms which had not been diagnosed before their incarceration in prisons were diagnosed in prisons, and their health conditions had worsened in time. Given the histories of women, lack of health insurance and the fact that prisons enabled most of the woman to benefit from health care services for the first time, it can be argued that women's general health status had been worsened due to the negative impacts of prisons on human health. The results of the study showed that mental and behavioral disorders, which were the most frequently reported diagnoses of women prisoners (**Table - 2**) are in line with the results of the study which reported that women prisoners in prisons had a mental problem including depression and anxiety [45]. Women prisoners suffered from depression (68.8%), 70% of them had a mental health problem and two-third of the prisoners had a psychiatric disorder or substance-use disorder [45]. According to the assumptions of the World Health Organization [39], approximately 450 million people have mental or behavioral disabilities. The number of individuals who have such problems is higher among the incarcerated population. Such problems generally had emerged before incarceration in many individuals and exacerbated in prisons or many new health problems occur during incarceration. The factors such as overcrowding, violence, being forced to stay alone, lack of privacy and/or insecurity towards the future might affect prisoners in prisons' negatively. Women prisoners experienced psychiatric disorders that require prescribed medicine compared to male prisoners, and women also experienced high rates of depression, anxiety and low self-esteem [45]. The women present more risks in terms of mental health problems, particularly when they arrive in prisons. The research study also identified that the most frequently reported diagnoses included mental and behavioral problems.

The study conducted by Stoller [46] indicated that the second issue, among three, that was expressed by women most frequently pointed out to problems related to reproductive health (31.9%) [47]. The most common health problems related to this field included pregnancy, gynecological disorders and breast disorders [48]. The study conducted by Kane and DiBartolo [41] found out that nearly half of the women suffered from STD at least for once, 22 women were examined during incarceration, and one-third of these women received abnormal results [43]. Another research study, which was conducted in 1999 and included 698 males between ages of 18 and 25, and 572 females who were older, examined the urine samples of the participants and reported that the prevalence of chlamydia and trachomatis was found as 8.9% for all women between the age of 18 and 25, as 3.3% for all women [49]. The study which was conducted with women prisoners in the Isfahan Central Prison reported that 24.5% of the women were diagnosed with vaginitis, 19% of them had a contagious infection disease, 82.9% had a history of dental treatment, and 53.8% of them had a surgical operation [25]. The study conducted by Davies et al. [48] based on the cancer record system in London prisons established that in every 5 years 31 new patients are diagnosed with cancer on average [49]. In addition, 83% of these diagnoses consisted of cervix carcinoma [6]. In the research process, one woman prisoner was diagnosed with advanced breast cancer, hospitalized for chemotherapy treatment, yet she passed away within a year.

According to the findings of a national research study, the rate of prisoners infected with HIV was 8-10 times higher than the individuals who were not incarcerated, the rate of Hepatitis C was 9-10 times higher, and the rate of tuberculosis was 4-17 times higher [6, 50]. A study published by the Centers for Disease Control and Prevention (CDC), reported that 35% of the imprisoned women suffered from syphilis, 27% of them had chlamydia and 8% of them had gonorrhea infection [50, 51]. The study conducted by Math, et al. [43] reported that the prevalence of syphilis and HIV infection was high in women prisoners compared to the general population. The findings of the study also indicated that women prisoners mostly experienced menstrual disorders, stress, and depression [44]. Women prisoners are particularly vulnerable to HIV. Suffering from STD in the past increases the risk of infected by HIV. When the typical histories of women prisoners that include drug abuse, being exposed to sexual harassment and violence, working as manual workers and unsafe sexual practices are taken into the consideration, most of the women are already infected with STD including HIV and Hepatitis. Therefore, the number of women prisoners infected with STD seems relatively higher. In the process of the research, a participant who was infected with HIV was included in the study, yet during the process, it was understood that another prisoner was also infected with HIV. The given findings demonstrate that women prisoners' health status should be assessed by considering all STDs when women are registered to prisons.

The physical activity field had the lowest average scale sub-score group with 11.14±4.86, it was followed by nutrition field with 15.29±5.10, by health responsibility with %15.60±5.63 and by stress management with 16.33±3.90. It was seen that the scores were considerably low. This opinions are also supported by the study conducted by Akın and Koçoglu [51] which reported that individuals who are widowed or living separately, have low levels of education, whose birthplace is a village, have an extended family and who perceive their own health status as bad+medium constitute a risk group in terms of not adopting and maintaining healthy lifestyle behaviors [52]. Furthermore, individuals who live below the poverty line, perceive their economic status as bad or work as blue-collar workers are also disadvantaged in terms of displaying healthy lifestyle behaviors. Another study found that women prisoners' were taken health training program, their information scores and displaying behaviors were low [42].

The most important problem in the context of health behavior is physical activity (**Table - 6**). **Table - 5** also shows that 88.7% of the women were not physically active. The given finding supports the low average score of the physical activity sub-scale score. The study also identified that opportunities for physical activity are limited in prisons or no opportunities are provided. The study conducted by Plugge, et al. [53] showed that 66.9% of the women had low levels of physical activity (not doing physical activity for at least five times in a week, less than 30 minutes, or not doing a regular physical activity), [29]. During the research process, a group of participants stated that they were not able to benefit from the gym sufficiently, or they had no opportunities to use it. However, according to APHA [42] standards, an opportunity to do aerobic exercise every day for one hour in an appropriate place apart from the living space should be provided for prisoners in prison [54]. Lack of physical activity may lead to obesity, diabetes and circulatory system diseases.

Another result of the study demonstrated that according to BMI values, 26.4% of the individuals were slightly overweight, 12.3% of them were obese and 3.8% were highly obese (**Table - 5**). The given finding of the search was compatible with the results provided in the literature. A research study performed two observations and revealed that 44% of the women were overweight or obese, and another study which monitored BMI values of women prisoners in prisons for three years after their registration reported that the prevalence of being

overweight or obese had a tendency to increase [55]. Clarke and Waring [55] monitored the weight changes of women prisoners in prisons found that 34.9% of the women were overweight and 32.1% of them were obese [56]. The same study also determined that the tendency of women to gain weight increase after their incarceration in prisons and prisons. [56]. The study conducted by Young, et al. [13] demonstrated that % 24 of the women were slightly overweight and 20.9% of them were obese [14]. Math, et al. [43] indicated that 17.6% of the women were categorized as slightly overweight [44]. Leddy, et al. [54] noted that gaining weight might be related to the sedentary lifestyle in prisons and lack of opportunities for physical activity [55]. Obesity is a global public health concern. The rate of obesity has been increasing both in developed and developing countries. Obesity has become a prevalent public health concern and therefore efforts against obesity have started to take place all over the world. The results of the study showed that women were not categorized as obese when they were registered to penal institutions, yet they reach that category in time. The tendency of women in obesity can be associated with their sedentary lifestyle in prisons, limited opportunities for physical activity and high-fat foods provided in institutions. According to the data provided by WHO, overweight and obesity are the main causes of 80% of Type 2 Diabetes in adults, 35% of the ischemic heart diseases, and 55% of hypertension and 1 million people dying each year as a result of being overweight or obese [55]. At this point, prisons are exceptional places to provide training programs for informing the public, which is considered as a primary preventative precaution to fight against obesity [55].

Nutrition is one of the most important problematic issues in the field of health behaviors, and it is directly related to the opportunities and conditions on the prisons. The study revealed that women consumed bread more than they need, their consumption of fruits and vegetables, and dairy products, legume and meat, and meat products were lower than their daily needs, and they did not consume fish and fishery products. The status of women to consume the food provided by the institution was also examined and it was found that women did not consume the food provided by the institution as the food was high in fat, had unappetizing appearance and taste and the same type of food was provided very frequently (**Table - 5**). The women stated that they consumed breakfast food, biscuits or bread when they did not want to eat the food provided by the institution. Therefore, it can be assumed that such kinds of dietary habits might lead to overweight in women. Apart from that, the results demonstrated that women did not have three meals a day and did not have breakfast every morning. The results of the study revealed that the individuals did not consume food necessary for a healthy diet which has an important role in protecting and improving health. However, it is a well-known fact that these women need to consume better quality of food [55]. The given problems related to the food (**Table - 5**) are not unique to prisons in Turkey but similar problems are observed in prisons located in many different countries [42]. Plugge, et al. [53] indicated in their study that nutrition in prisons was weak and based on carbohydrates [42]. The same study also identified that a small number of women (12.7%) consumed fruits and vegetables (at least 5 times per day), even its not sufficient [35]. It was also found that women had complaints about the fact that they had limited opportunities to choose food. The women stated that the food had an unappetizing taste and was not cooked well [42]. Young, et al. [13] pointed out that only10.2 % of the prisoners consumed fewer fruits and vegetables than recommended amounts [35].

In the scope of the research, the capacities of experts in the fields of health, justice, and social services, institutions of health and judicial units were used to solve problems identified in the physiological field. In this process, women only had contact with family physicians but they could not access specialists. The difficulties caused by the law-enforcement officers in the

transfer of patients and the crowdedness of the contracted hospitals also cause delays in diagnosis and treatment. Some of the cases were not directed to relevant departments. Another obstacle to prisoners' treatment processes is the lack of opportunity to treat prisoners in university hospitals.

The study revealed that most of the women smoked cigarettes and consumed tobacco products and they used stimulants/ substances and drugs and consumed alcohol before their incarceration in prisons (**Table - 5**). The studies in the literature also supported the given findings of the study [55, 57]. Akcan, et al. [57] reported that in 1/5 of the cases individuals stated that they were under the influence of a substance, 1/3 of them consumed alcohol and/or used a substance, and respectively, 1/3 of them consumed alcohol, 1/5 of them used more than one substance, 1/7 of them smoked marijuana, 1/7 of them used drugs, 1/14 of them used cocaine and 1/20 of them used heroin. It was also indicated that women who used more than one type of drug and marijuana were incarcerated in prisons more than once and particularly committed the offense of theft [58]. The results of the study emphasized that alcohol and/or substance abuse has a direct relationship with committing an offense, they have an impact on each other and cause significant social, economic and health issues, the prisoners in prisons might experience health problems different from the general health problems, not being able to access substances is an important health problem in the first week of incarceration in prisons, developed countries have comprehended the importance of the relationship between alcohol and/or substance abuse, and have accelerated their efforts on the issue and use prisons as important centers for diagnosing and treating alcohol and/or substance use. When gender is examined as a variable, differences were found in terms of illegal drug abuse. A research study showed that the percentage of women prisoners who use heroin was higher than the women who were not incarcerated. Besides, it was reported that women prisoners' lower self-esteem scores were lower than women who were not incarcerated [59]. According to Colombia University's National Center on Addiction and Substance Abuse [60], two-fifth of the prisoners, who were incarcerated for the first time, and the four-fifth of the prisoners who were incarcerated for five and more times were regular substance users. The rate of women who used substances was found higher compared to men [61]. Around the world, the majority of women prisoners need treatment for substance abuse. Different needs of women prisoners emerge during the treatment of substance addiction. The number of programs that provide a specific treatment for women prisoners is very limited. If the problem of substance addiction is not treated in penal institutions, the probability of recidivism increases to finance the addiction particularly by committing offenses related to drugs, thievery and manual working [62]. The study conducted by Kane and DiBartolo [41] with 30 women pointed out that 13 women had a substance abuse problem before their incarceration, and 16 of them still had an alcohol abuse problem. The findings also revealed that 25.0% of the prisoners were alcohol abusers, and more than half of them were under the influence of alcohol/substance when they committed an offense [62]. The study conducted by Mateyoke-Scrivner, et al. [61] reported that individuals with high crime rates were also using substances and suffered from more health problems.

Conclusion and Suggestion

The results of the study identified that women prisoners had suffered from at least one illness, and more than half of the women were recently diagnosed. The results also showed that some of the women had health problems that were not diagnosed. The study examined the healthy lifestyle behaviors of women and found that women were deprived of physical activity, suffered from malnourishment, using substances, had negative reproductive health behaviors and had lack of information about health care supervision and stress management. To enable women to rejoin the society by acquiring

healthier and more positive health behaviors; their physical health problems and health behaviors should be comprehensively assessed when they are registered to prisons and the assessments should be maintained periodically and health status of the prisoners should be assessed before their release from the prison; the maintenance of health care services should be ensured by providing health education, counseling, health screening, treatment, rehabilitation and release planning in the framework public health to help women to learn preventative and improving health behaviors towards nutrition, health care supervision, physical activity, and substance abuse and the public health services provided in prison, the only place that women can access health services, should be planned by prioritizing primordial (primary), secondary, tertiary and quaternary protection and with a gender-based approach.

In the field of health behaviors, nurses in prisons assess prisoners' well-being and care status in every aspect, diagnose their problems, provide treatment and education for individuals. Nurses working within the criminal justice system have unique opportunities to inform individuals regarding the process of adjusting to illness and the importance of treatment, nutrition, exercise, and follow-ups. Nurses also have key roles in explaining the importance of accessible resources for maintaining antenatal care, adopting an appropriate diet and exercise program, the use of contraceptives and childcare. The services provided in prisons and the nurses ensure the continuity of prisoners' care both inside and outside of the institution and assist to plan prisoners' release from the prison.

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