

## The Roles and Duties of Physiotherapists on Women's Health During Disaster Period

*Afet Döneminde Kadın Sağlığı Üzerine Fizyoterapistlerin Rol ve Görevleri*

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### ÖZET

Afetlerin görülme sıklığı Türkiye’de giderek artmakta ve bu afetler sonucunda yaşanan büyük can kayıplarının yanı sıra, rehabilitasyona ihtiyaç duyan birey sayısında da büyük artışlar görülmektedir. Günümüzde afetler ve afetlerin yol açtığı fiziksel, ruhsal ve çevresel hasarlar özellikle kadınların yaşamını daha çok etkilemektedir. Kadınların toplumda yeri düşünüldüğünde erken dönemde kadınlara rehabilitasyonun başlaması, toplumun toparlanmasında önemli rol oynayacaktır. Özellikle kadın sağlığı üzerine çalışan fizyoterapistler değerlendirme, tedavi ve günlük yaşama adaptasyonda oldukça önemli rol oynayacaktır. Afet sonrası dönemde kadınların en sık yaşadığı sorunlar; genital hijyenin bozulması, menstrüel problemler, gebelikte ve doğum sonrasında yaşanan sorunlar ve pelvik taban disfonksiyonlarıdır. Bu problemlerde çevresel koşullara uygun olacak şekilde fizyoterapistlerin yapabileceği uygulamalar ise fizyoterapi ile ilgili değerlendirmeler, manuel uygulamalar, farklı egzersiz yaklaşımları ve bu problemler için önerilebilecek koruyucu yaklaşımlardır. Ancak, bu manuel uygulamalar ve egzersizler bireye özel olarak planlanmalı ve kısa sürede yanıt alınabilecek nitelikte olmalıdır.

Afet yönetim programlarına en erken dönemde eğitilmiş ve deneyimli fizyoterapistlerin dahil olması, kapsamlı rehabilitasyon müdahalelerinin oluşturulması, afetzedelerin fonksiyonel durumlarının ve yaşam kalitelerinin artırılmasını sağlayacaktır.

**Anahtar Kelimeler:** Afetler, doğal afetler, fizyoterapi ve rehabilitasyon, fizyoterapist, kadın sağlığı.

### ABSTRACT

The incidence of disasters is increasing in Turkey, and in addition to the great loss of life experienced as a result of these disasters, there is also a large increase in the number of individuals in need of rehabilitation. Today, disasters and the physical, mental and environmental damage caused by disasters affect the lives of women, especially. Considering the place of women in society, starting rehabilitation for women at an early age will play an important role in the recovery of society. Physiotherapists, especially those working on women's health, will play a very important role in the evaluation, treatment and adaptation of these problems to daily life with their knowledge and experience. The most common problems experienced by women in the post-disaster period are; deterioration of genital hygiene, menstrual problems, problems experienced during pregnancy and after birth, and pelvic floor dysfunctions. The practices that physiotherapists can do in these problems in accordance with environmental conditions are physiotherapy-related evaluations, manual applications, different exercise approaches and preventive approaches that can be recommended for these problems. However, these manual applications and exercises should be planned specifically for the individual and should be responsive to responses in a short time. Creating comprehensive rehabilitation interventions involving trained and experienced physiotherapists in disaster management programs will increase the functional status and quality of life of disaster victims.

**Key Words:** Disasters, Natural Disasters, Physiotherapist, Physiotherapy and Rehabilitation, Women's Health

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**Başvuru/Submitted:** 15.01.2024 **Kabul/Accepted:** 13.02.2024

**Cite this article as:** Doğan H. Akbayrak T. The Roles and Duties of Physiotherapists on Women's Health During Disaster Period. *J TOGU Heal Sci.* 2024;4(1:Özel Sayı):34-44.

## **INTRODUCTION**

Natural disasters are events of natural origin that interrupt the normal life and social activities of people and other living things, cause physical and economic losses, and are difficult to overcome by the affected society (1). In Turkey, earthquakes, landslides, floods, erosion and avalanches are among the main natural disasters (2). It is reported that two earthquakes centered in Kahramanmaraş affected a population of approximately 23 million in Türkiye and Syria. In addition to loss of life and property as a result of disasters, many health problems have also emerged in society. During disasters, women are affected by more health problems than men (3). After disasters, women's sexual and reproductive health may be threatened and there may be difficulties in accessing healthcare. According to research, the most common problems women may encounter after a disaster are (4-7);

- Deterioration of genital hygiene and pelvic inflammatory syndrome
- Menstrual disorders, Risk of premature birth in pregnant women
- Disruptions in birth control (development of unwanted pregnancies),
- Low birth weight in newborn babies
- Problems in babies' breast milk intake
- Pelvic floor dysfunction problems

## **Recommendations for Prevention of Genital Hygiene and Infection**

After disasters, vaginal and urinary infections can frequently occur due to reasons such as difficulties in accessing hygiene materials and the use of public toilets as a result of the deterioration of the physical infrastructure. To protect from infections, the door handle in the toilet should not be touched directly. The door handle should be opened and closed with the help of a napkin. If the toilet used is a toilet, a napkin can be placed on the surfaces that will come into contact with the skin before sitting, or these surfaces can be cleaned with a disinfectant and the toilet can be used in this way. The inside of the vagina should not be washed with water and soap or gel should not be used. In this way, the natural flora of the vagina will be protected. After defecation or micturition, the toilet lid should be closed before flushing. This traps air inside the toilet and prevents germs from spreading into the room (8,9).

Diapers can be used as an alternative in disaster situations when pads are not available. In environments where diapers are not available, old clothes (provided they are clean) can be

used. Women can also use vaginal tampons and menstrual cups. However, it should never be forgotten that they should be changed frequently and sterilized (1,8,9).

### **Evaluation and Applicable Physiotherapy Approaches in Menstrual Problems**

A study on the 2008 Wenchuan earthquake in China reported that after the disaster, women were more likely to suffer from gynecological disorders such as pelvic inflammatory disease, menstrual disorders, and lower urinary tract infections. In particular, menstrual disorders were thought to result from mental health disorders such as obsessive-compulsive features and sleep disorders (10). Additionally, approximately 30% of women who survived the Wenchuan earthquake suffered significant losses and complained of menstrual irregularities after the earthquake. This has been shown to be due to the stress caused by losing loved ones, property, and social resources. (11).

### **Evaluation Methods**

Evaluations in terms of physiotherapy and rehabilitation are mostly focused on menstrual pain and symptoms, and the effects of these symptoms on physical health, menstrual attitudes and quality of life are investigated. It is important to first determine the cause of menstrual pain in the evaluation (12). Individuals were asked about their age at menarche, the frequency of experiencing painful menstruation, how long they have had painful complaints, whether their menstrual cycles are regular, how many days they menstruate, how many days their menstruation lasts, the number of pads used on the busiest day, the total number of pads used during menstruation, menstrual period after the disaster. The patient should be questioned about what products she used for bleeding, when the pain started, whether she used medication during menstruation, the name of the medication, dose, amount, and when she took the medication. Additionally, individuals are advised of systemic symptoms that develop due to menstruation (menstrual cramps, general body pain, headache, leg pain, lower back pain, constant abdominal pain, nausea, diarrhea, constipation, dizziness, fatigue, weakness, sleep problems, edema, breast tenderness). (e.g., irritability, irritability, menstrual discharge, menstrual blood clotting, lack of concentration, difficulty in normal activities, change in appetite, vomiting and clumsiness) and their severity should be questioned (12,13).

Menstrual Symptom Scale can be used to evaluate the presence and severity of menstrual symptoms (14,15). Positive and negative attitudes and behaviors of individuals towards menstruation during the menstruation process can be evaluated with the Menstruation

Attitude Scale (MTS) (16). Body diagram, Visual Analogue Scale, Algometer evaluation, McGill Pain Questionnaire, etc. can be used to determine pain intensity and the area where the pain occurs (12).

### **Treatment Methods**

Lifestyle recommendations; It includes recommendations such as the use of loose and cotton clothing, warm standing showers, adequate and quality sleep (at least 6-8 hours), rest, relaxation exercises and the use of heat patches in case of pain (6,16,17). In a study, it was stated that the use of loose, cotton and hygienic clothing during menstruation prevented the occurrence of menstrual infections and reduced menstrual symptoms (17). Sleep patterns are of great importance in regulating the release and integration of hormones and transmitters secreted and regulated by the brain. There are studies showing that hormone levels are related to how well you rest (16,18).

It is important to use relaxation techniques because they are effective and easy-to-apply methods to reduce the effects of physical and psychological conditions such as stress, chronic pain, anxiety, depression and mood changes on people (12,19). Various relaxation techniques can be used to reduce both stress and pain in women with post-disaster menstrual pain. Although there are many relaxation training methods, Jacobson's Progressive Relaxation Training is among the most frequently used methods in the literature (12,20).

Local heat applications increase blood flow in the application area through vasodilation, reduce the release of prostaglandin, bradykinin and histamine, relax striated muscles and reduce the perception of pain. These treatment approaches are traditional practices that can help reduce post-disaster women's pelvic pain symptoms if appropriate conditions are created (12,21).

Classical massage increases blood and lymph flow, facilitates the removal of irritating substances such as lactic acid and prostaglandin, increases tissue healing and reduces menstrual pain. It relaxes the muscles, creates a feeling of well-being through emotional care and touch, reduces the perception of pain, and provides mental and physical relaxation. According to gate control theory; It is effective in closing the pain gate by stimulating thick fibers and thus preventing its perception (12,22).

Aerobic exercise stimulates the release of Interleukin-6 (IL-6), an anti-inflammatory cytokine, from muscles. This increases the removal of pro-inflammatory cytokines such as Tumor Necrotizing Factor- $\alpha$  (Tnf- $\alpha$ ) and the release of anti-inflammatory cytokines such as Interleukin-10 (IL-10). In this way, exercise has an anti-inflammatory effect. Additionally, there are hypotheses that exercise increases pelvic blood flow and stimulates the release of

endorphins, which have an analgesic effect. Studies show that regular exercise performed for 30-120 minutes, on average 1-2 times a day, reduces menstrual symptoms and pain caused by dysmenorrhea (12,23).

During connective tissue massage (KDM), when traction (skin traction) is applied to the tense areas consisting of dermatomes and myotomes, a stimulus is produced on the skin that stimulates the autonomic nerve endings, mast cells are stimulated, the parasympathetic effect increases, the healing process is accelerated with vasodilation and a reflex effect occurs. Stimulation of segmental reflexes produces histamine release from mast cells, leading to local edema and arteriolar dilatation. KDM increases uterine circulation in this way and can also be used to reduce menstrual pain through opposing irritation (13,24).

In the kinesio tape method; The most commonly used methods for pain and mobilization are space technique and fascia correction. Kinesio taping is a practical and effective method in menstrual pain management (12,19).

### **Evaluation and Physiotherapy Approaches for Problems That May Occur During Pregnancy and Postpartum**

Due to both maternal and fetal effects during pregnancy; Exercise, healthy nutrition and improving mental health will help you go through this process better. (25). Difficulties arising from disasters, combined with the burden of pregnancy or birth, can negatively affect the recovery process of women (26). Premature birth, low birth weight, loss of the baby in the womb, various birth complications and developmental delay of the baby constitute some of these problems. In addition, nutritional problems such as protein-energy deficiency, diarrhea, anemia, vitamin deficiencies, eating behavior disorders and chronic diseases (diabetic coma, gastrointestinal tract bleeding, etc.) may also be observed in disasters (4,27,28).

### **Evaluation**

In the evaluation of physical activity level: Subjectively, Turkish versions such as "Pregnancy Physical Activity Questionnaire", "Kaiser Physical Activity Questionnaire", "International Physical Activity Questionnaire", "Pregnancy Leisure Time Physical Activity Questionnaire", Medical Evaluation of Readiness for Physical Activity" have been made and are reliable and can be used in pregnant women. are scales. In objective evaluation; Pedometers and accelerometers can be used. These devices record the person's physical activity level and information about activities in daily life (25,29). Muscular fitness of pregnant women; It can be evaluated with dynamometers, manual muscle testing and muscle endurance tests. In addition, we can evaluate pelvic floor muscle strength and endurance by measuring compression pressure

using the “Modified Oxford Scale” using a single finger placed intravaginally or objectively using a perineometer (25). Evaluation of Orthopedic Problems: It is important to perform the necessary orthopedic tests to evaluate problems such as avascular necrosis, temporary osteoporosis, muscle cramps, restless legs syndrome, carpal tunnel syndrome, cervical and lumbar hernias, De Quervain syndrome that may develop in the lower and upper extremities in pregnant women. Exercises for pregnant women with orthopedic problems should be planned individually and modified when necessary (25-30).

Assessment of exercise capacity involves measuring and monitoring VO<sub>2</sub>max, heart rate and blood pressure parameters using a bicycle or treadmill in standard or appropriate environments. In cases where these devices are not available, the 6-minute walk test or the timed get up and go test can be used with the Borg scale, simple blood pressure monitor and pulse meter. Additionally, if simple walking exercises are to be given, a speech test can be used to adjust the exercise intensity (25). Components of exercise during pregnancy;

- Posture assessment – training, stretching and strengthening exercises for posture disorders,
- Training correct body mechanics – sitting, standing, lifting, lying down and transitions
- Resistant exercises for suitable muscles: intensity and amount of load should be adjusted carefully.
- Proprioception exercises to improve body perception and balance
- Pelvic floor exercises
- Diastasis recti evaluation and correction exercises
- Safe aerobic exercises – swimming etc... (moderate intensity)
- Relaxation techniques
- Postpartum exercise training (25,30).

### **Physiotherapy and Rehabilitation Approaches for Post-Pregnancy Breastfeeding Problems**

Breastfeeding should be encouraged and supported in disaster settings. Because breast milk is often the only reliable source of nutrition for the baby during a disaster. Milk production of a mother exposed to disasters may decrease due to reasons such as stress and anxiety, or blockages may occur in the mother's milk ducts due to reasons such as premature birth of her baby. Among the breastfeeding problems most frequently reported in the literature: nipple pain, low milk production (perceived or real), blocked ducts, mastitis, breast abscess and engorgement (31). With breastfeeding training, pumping methods, and physiotherapy practices,

women under stress can produce milk, and many weaned women can start breastfeeding again if they wish and are appropriately supported (27,30). Physiotherapy and rehabilitation approaches to increase breast milk; hot applications (to increase milk flow if there is no infection), cold applications (to reduce edema), routine care, expressing milk after breastfeeding at certain intervals, classical massage, areolar massage, manual lymph drainage (increasing lymph flow can strengthen immunity and increase milk production), Kinesio taping (can relax the milk ducts and stimulate milk production) (30-32) and ultrasound therapy etc. are among the treatment methods that can increase breastfeeding and increase the amount of milk (30,32).

### **Evaluations and Physiotherapy and Rehabilitation Approaches for Pelvic Floor Dysfunction**

Pelvic floor dysfunction; It is a condition in which symptoms such as pelvic organ prolapse, urinary and anal incontinence, overactive bladder, sexual dysfunction and chronic pelvic pain occur due to the deterioration of pelvic support (34). It is very important to evaluate the pelvic floor and prepare an appropriate physiotherapy and rehabilitation program in order to prevent the occurrence of pelvic floor symptoms after a disaster, to reduce pre-existing symptoms and to improve the quality of life (33-35).

#### **Evaluation**

Obstetric and Urogynecological history, Physical and Neurological Evaluation (evaluation of light touch, hot-cold, sharp-blunt sensations and anal reflex, etc.), evaluation of the presence and severity of pelvic floor symptoms and quality of life (Global Pelvic Floor Discomfort Questionnaire, Pelvic Floor Distress Inventory- 20, Urogenital Distress Inventory, Overactive Bladder Questionnaire, King Health Questionnaire, Incontinence Quality of Life Scale, etc. scales, evaluation methods such as Pad test, bladder diary, Simplified Pelvic Organ Prolapse Evaluation...) are among the evaluation methods (29).

Evaluation of pelvic floor muscle contraction and relaxation, muscle strength and endurance can be done by vaginal or anal palpation (Modified Oxford scale, PERFECT application...), electromyographic evaluation (intravaginal, intraanal, perineal), dynamometer, Ultrasound and Magnetic Resonance (34). Urodynamic examinations (uroflowmeter, cystometer, etc.) are among the evaluation methods (34,35).

#### **Treatment methods**

Patients can be educated about the function of the pelvic floor muscles, information about pelvic floor symptoms, risk factors, urination and defecation posture, eating habits,

weight control, fluid intake recommendations, and physical activity/exercise recommendations (35).

In bladder training; To reorganize normal bladder function and depending on the patient's incontinence status and the feeling of urgency and urgency, urination time can be increased by 30 minutes until every 3-4 hours (36).

Pelvic floor muscle training, muscle strengthening if muscle strength is weak, and relaxation training (i.e., electrical stimulation, magnetic field therapy, stabilization exercises, biofeedback, treatment with vaginal tampons and vaginal cones) can be applied if there is a hypertonic pelvic floor (35,37). Lifestyle changes (reducing caffeinated foods, regulating fluid intake, introducing genital hygiene behaviors, etc.) (25). Teaching the Knack maneuver (the ability to voluntarily contract the pelvic floor muscle to prevent urinary incontinence just before or during the increase in intra-abdominal pressure) may reduce pelvic floor symptoms (35,37). For patients complaining of constipation, defecation training, teaching abdominal-perineal pressure balance and exercise training for this purpose, connective tissue massage, anorectal biofeedback, electrical stimulation, kinesio taping, etc. are among the treatment modalities that can be used (35).

If menopausal symptoms are present, in order to reduce climacteric complaints; Aerobic exercise training, connective tissue manipulation, weight-bearing exercise programs to prevent osteoporosis, relaxation training to ease the transition to menopause, paced breathing, word repetition and meditation are among the physiotherapy approaches that can be applied (29). If there is edema/lymphedema developing after trauma, limb elevation, compression therapy, bandage applications, elastic compression clothing, soft tissue mobilization, kinesio taping, manual lymph drainage, complex unloading physiotherapy, and exercise methods can be used (17,29).

## **CONCLUSION**

Physiotherapy and rehabilitation methods applied to women in the post-disaster period include early adaptation to daily life, protection of genital hygiene, reduction of menstrual pain, prevention of risky pregnancy situations, childbirth education, development of the postpartum recovery process, treatment of symptoms that will prevent the baby from breastfeeding, treatment of pelvic floor dysfunctions, post-traumatic It includes many rehabilitation programs such as improving edema/lymphedema and reducing menopausal symptoms. These practices are very important for women, who shoulder the great burden of society, to benefit society and their families. In our country, where many disasters occur, the active role of physiotherapists



working in this field during disaster periods will facilitate women's access to physiotherapy and rehabilitation services to improve their quality of life.

**Financial support:** None.

**Author Contribution: Idea:** HD, TA; **Design:** HD; **Literature review:** HD; **Manuscript writing:** HD, TA; **Critical review:** HD, TA.

**Acknowledgments:** None

**Conflicts of Interest:** The authors declare no conflict of interest.

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