

Difficulties Experienced by Families Following Unsuccessful Treatment of Pediculus capitis: the Mothers' Perspective

Pediculus capitis Tedavisinde Başarısız Olan Ailelerin Deneyimledikleri Güçlükler: Annelerin Perspektifinden

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ABSTRACT

Objective: The study aimed to determine the psychological and social difficulties faced by primary school children and their families, particularly from the mothers' perspective, when treatment for *Pediculus capitis* fails.

Methods: This descriptive study comprised 14 mothers of 19 children in the primary school in Kocaeli. The children and families were infested with lice and nits and were unsuccessfully treated with pediculicides. Data were collected by a semi-structured questionnaire with in-depth individual interviews with a qualitative approach from mothers.

Results: Seven social difficulties were experienced by children and families during treatment from the mothers' perspective, lack of support from other family members; children's exposure to verbal and physical violence; exclusion from the school and society due to stigma; children's refusal to be treated; difficulties in the physical removal of the nits; inability to pay for the pediculicide; and inappropriate physical conditions of the house. Eight psychological difficulties were experienced by children and their families: worry, upheaval, embarrassment/shame, guilt, being overwhelmed, disgust, scorn and despair.

Conclusion: Parents and children, whose treatment for *Pediculus capitis* failed, experienced many psychological and social difficulties. Further studies should be conducted to determine the relation to pediculosis management and their difficulties of children and families from different socio-economic levels. (*Türkiye Parazit Derg* 2012; 36: 82-6)

Key Words: Head louse, *Pediculus humanus capitis*, difficulty, mothers' perspective, school children

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ÖZET

Amaç: Bu çalışma, *Pediculus capitis* tedavisinde başarısız olan ilköğretim çocukları ve ailelerinin annelerinin perspektifinden karşı karşıya kaldıkları psikolojik ve sosyal güçlükleri belirlemeyi amaçlamıştır.

Yöntemler: Tanımlayıcı çalışmanın örneğini, Kocaeli ilindeki bir ilköğretim okulunda okuyan çocukların (n=19) anneleri (n=14) oluşturdu. Bu çocuklar ve ailesi pedikulosis capitis tedavisinde başarısız olup, saçlı derilerinde baş biti ve/veya sirkesi olanlardır. Veriler kalitatif veri toplama tekniklerinden bireysel derinlemesine görüşme tekniğine dayalı olarak yarı yapılandırılmış bir soru formuyla annelerden toplandı.

Bulgular: Tedavi sürecinde çocuklar ve ailesi yedi sosyal güçlük deneyimledi. Bunlar; annelerin aile üyelerinden hiçbir destek alamaması, çocukların sözel ve fiziksel şiddete maruz kalması, ailenin ve çocukların etiketlenmeye bağlı dışlanması, çocukların tedaviyi kabul etmemesi, sirkelerin temizlenmesinde zorlanması, ilacın temin edilememesi ve evin fiziki koşullarının uygun olmaması idi. Psikolojik güçlükler ile ilgili ise sekiz tema bulundu. Bunlar; üzüntü, tedirginlik, utanma/mahcupiyet, suçluluk, bıkkınlık, öğrenme, aşağılanma ve umutsuzluk idi.

Sonuç: Bu çalışmada, *Pediculus capitis* tedavisinde başarısız olan çocuklar ve anneleri çok sayıda sosyal ve psikolojik güçlüklerle karşılaştığı saptanmıştır. Farklı sosyoekonomik düzeydeki çocuklar ve ailelerinin baş biti ile yönetimi ile ilgili karşılaştıkları güçlükleri belirlemeye yönelik daha kapsamlı çalışmalar yürütülmelidir. (*Türkiye Parazit Derg* 2012; 36: 82-6)

Anahtar Sözcükler: Baş biti, *Pediculus humanus capitis*, güçlük, anne perspektifi, okul çocuğu

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INTRODUCTION

Pediculosis capitis is an important public health problem, which influences the wellbeing of children and their families (1-3). The prevalence of head louse infestations varies between 0.7% and 59% among school children worldwide (4). In Turkey, it ranges from 1.2% to 27.4% in public primary schools (5). In recent years, the morbidity rate has increased in the USA, several European and Asian countries as well as in Australia although it is still regarded as a low priority issue among public health authorities (3, 6).

The majority of studies on head lice have focused on the prevalence and effectiveness of treatment techniques (4, 5). There is little information regarding the experience, actions and opinions of parents, school teachers, and health providers with regard to infested children (1, 6-8). Problems or difficulties related to Pediculosis capitis are mainly of social and psychological rather than medical nature (1, 2, 6, 7, 9-12). Usually mothers suffer from a lack of support during treatment (6, 13), and communication among family members can deteriorate (3). Infested individuals and their families can experience guilt, frustration, social distress, embarrassment, shame, anxiety, and upheaval (2, 3, 8, 9, 11, 12).

To our knowledge, there are no studies showing the difficulties which families and children experience as a result of unsuccessful treatment. The aim of the study was to determine the psychological and social difficulties faced by primary school children and their families, particularly from the mothers' perspective, when the treatment for Pediculosis capitis fails.

METHODS

This study included families living in a small industrial area with a high immigration rate and low socio-economic level. Overall, 414 children (from 267 families) attending the Turk Pirelli Elementary School in Kocaeli (Turkey) were examined, and 58 children (6-12 years old) were found to be infested with head lice and/or their nits by a dermatologist or a public health nurse. Shampoos with 1% permethrin was used to eradicate Pediculosis capitis. After two weeks, people who had received treatment were re-examined and the successful treatment were evaluated (5). In this descriptive study, nineteen families, whose children were infested with lice or nits and who had undergone unsuccessful treatment, were chosen via purposive sampling. Only 14 of these families agreed to be included in this study and were visited during the period February-April 2007.

The semi-structured interview consisted of two open-ended questions: The interviewed people were first asked regarding the difficulties they experienced during the treatment and then what were the feelings of the mother and other family members, whose children remained infested with lice and nits even after treatment. The first question included details about the mother, husband, children, other family members, child's friends, and neighbours as well as the physical condition of the house, while the second question dealt with impressions of the mother, children and other family members.

The interviews were conducted using a qualitative approach with in-depth individual interviews between May 7 and June 8, 2007.

The interviews were made within the first week after the unsuccessful treatment of a head louse infestation. Data were collected using a tape-recorder in the house of the participant. Particular attention was paid to the focusing of the questions, while care was taken to avoid "directing" or multi-dimensional questions. The mothers were informed both orally and in writing about the aim and design of the study. The participants were notified at the beginning of the interview that data obtained from them would be confidential.

Data were evaluated via thematic content analysis. The recorded interviews were transferred to a written text by one of the authors not present during the interview. The expressions and sentences belonging to a given family/mother were enumerated by the authors. The coding of the sentences was made by taking into consideration the sub-sections and theoretical grounds of the research. Two different coding lists were used to determine the conceptual meaning of the expressions or sentences. These lists were compared for similarities and differences. The "themes" of the research were formed by piecing together the codes (formulated meanings), which enabled two writers to reach a consensus. Crucial expressions and their formulated meanings were placed in appropriate theme categories. Themes, which were closely related to each other, were grouped together.

RESULTS

The age of the mothers varied from 23 to 45 (average=34.2). Seventy-nine percent of them were primary school graduates, whereas the remainder of the mothers were literate despite not having received any schooling. All the women were housewives. The average monthly income of the families varied from \$ 248 to \$ 662. Half the families did not have social or health insurance.

The 14 families who had an infested child in the examined school, were composed of 81 members (min-max: 4-9, average=6 members). The male/female ratio in the family was 3/7. Forty-five percent of them (37 people) had head lice and/or nits. The number of members in each family with head lice and/or nits ranged between 1-5 (average=3).

Seven themes were identified regarding the social difficulties that families had experienced from the mothers' perspective during an unsuccessful treatment: lack of support from other family members; children's exposure to verbal and physical violence; exclusion from the school and society due to stigma; children's refusal to be treated; difficulties in the physical removal of the nits; inability to pay for the pediculicide; and inappropriate physical conditions of the house (Table 1).

Thirteen mothers stated that they were considered to be the only person responsible for diagnosis and treatment of lice infestations of their families and relatives. Primary education graduate mother A who was aged 28, and whose family consisted of nine people, three of whom, including herself, had nits at the end of the treatment explained: "I deal with the problem by myself because my family does not support me. Everyone tells me that this is the responsibility of the mother".

Twelve mothers mentioned that 25 out of their 28 children experienced verbal or physical violence administered by parents and/

or teachers. Primary school graduate mother N (38 years old), in whose family, including herself, there were five infested people with head lice and/or nits, described her situation: "I get angry and shout at them saying: 'You are so lousy, where did you bring these lice from?'".

All mothers complained that they and their families were stigmatized by their neighbours, while their children were stigmatized by their school friends, playmates and siblings. Accordingly, they were rejected by their social environment and their social relations were limited, having a negative effect on the entire family. Mother J, aged 39 and whose three children had nits, explained: "...Neighbours tell me that head lice do not infest clean people. They make fun of us and do not allow us to go to their houses". Participant N stated that her child was stigmatized even by the siblings as follows: "They call him 'lousy' and then a fight starts between them".

All mothers reported that their children (22 out of 28) tried by all means possible to avoid treatment, by not wanting their hair washed, combed and/or nits removed. Mother D, who was aged 36, who, together with her 4 children, had head lice and/or nits, explained: "Cold water is not enough... I wash my children's hair with very hot water so that nothing could find its way into their hair. They fear me and try to escape".

Seven mothers stated that they combed their children's hair for many hours a day in the first three days of the treatment, and as a result their children opposed the continuation of this treatment. Primary school graduate mother F who was aged 35 said: "At the beginning I combed the hair of the child everyday for hours until their skin had wounds...."

All mothers mentioned that the physical removal of nits is one of the most difficult and time-consuming task. Mother B who was

aged 40 and whose family consisted of seven members, three of whom, including herself, had head lice and/or nits noted at the end of the treatment: "Most of us are now clean of lice, however the situation with nits is very bad. There are these nits, which you cannot remove easily, especially from the long hairs of the girl".

Half of the families mentioned that they had difficulties in purchasing a pediculicide because they did not have health insurance since they were poor. Therefore, four mothers tried to control lice by applying traditional remedies. Mother C expressed her feelings by saying: "At the beginning we bought some shampoo pediculicides but then we could no longer afford it. As an alternative remedy, I put gasoline on my daughters' hair".

Half of the mothers stated that they experienced difficulties because there was no bathroom in the house, and few rooms for the entire family, meaning that two or more children had to sleep in the same bed. Participant K expressed: "The house is small, and there is not a separate bed for each child, accordingly children have to sleep in the same bed".

Eight themes were identified regarding the psychological difficulties that mothers and their children experienced: worry, upheaval, embarrassment and shame, guilt, being overwhelmed, disgust, scorn, and despair (Table 1).

All mothers reported that they worry about the fact that they and their children still have lice and/or nits. Primary school graduate mother F aged 35 expressed her feelings: "I wish you could understand how much I worry. I can't sleep. Neighbours do not talk to us since we are lousy. I do not want to talk to my children about my concerns".

Participant H mentioned the worry of her eight year old daughter as follows: "She cannot shape her hair the way she wants and

Table 1. Mother's perspective regarding difficulties faced by primary school children and their families

Observations	Mothers
Social Difficulties	
Lack of support from other family members	A, B, D, E, F, G, H, I, J, K, L, M, N
Difficulties in the physical removal of the nits	A, B, C, D, E, F, G, H, I, J, K, L, M, N
Children's refusal to be treated	A, B, C, D, E, F, G, H, I, J, K, L, M, N
Children's exposure to verbal and physical violence by their parents and/or teachers	A, B, C, D, E, F, G, H, I, J, K, N
Exclusion of children and their families from the school and society due to stigma	A, B, C, D, E, F, G, H, I, J, K, L, M, N
Inability to pay for the pediculicide	B, C, E, G, H, L, N
Inappropriate physical conditions of the home	A, B, E, G, H, J, K
Psychological Difficulties	
Worry	A, B, C, D, E, F, G, H, I, J, K, L, M, N
Upheaval	B, C, E, F, G, I, M, N
Embarrassment and shame	B, C, D, E, I, K, L
Guilt	C, D, G, K, M, N
Overwhelming feeling	A, B, D, E, G
Disgust	C, D, F, H, L
Scorn	A, B, F, N
Despair	C, E, I

this upsets her very much. However, the most worrisome thing is that her friends do not play with her anymore. She expresses her frustrations at home and cries very loudly".

Eight mothers noted that they and their 14 children felt the upheaval. Participant E said: "I feel upheaval with the thought that nits will be seen on my hair when we go to our neighbours' house. They think that I am very dirty even though I am a very clean woman. Participant I explained the upheaval felt by her primary school first grade son: "My son asks me whether lice and nits take all his blood. Even if I say no, he continues to feel uneasy".

Half of the mothers said that they were embarrassed, especially in relation to their neighbours, the social environment and their husbands, while their children were embarrassed in relation to their friends and teachers. Primary school graduate participant I who was aged 40 and was embarrassed in front of her husband, explained her condition as follows: "I feel ashamed when my husband tells me 'Do not come close to me, I do not want them to be transmitted to me. He presumably thinks that all of us, especially me, are very dirty." High school graduate mother L who was aged 26 explained the embarrassment of her daughter: "My daughter is very ashamed because her friends avoid her. No matter what I say, she is always ashamed and looks down at the ground".

Six mothers stated that they felt guilty for having head lice and/or nits in the family and for the failure of treatment(s). Participant C declared: "My husband and his mother accuse me of not treating the children. I have a bad conscience and I feel guilty, as I think that I can not carry out my responsibilities towards my children".

Five mothers reported that they were overwhelmed by the fact that they or their children constantly suffered from head lice. Participant A stated: "This problem does not come to an end in our house, and I am overwhelmed by the need to clean and use anti-lice medications".

Five mothers reported that they were disgusted by the presence of lice and nits. Participant E said: "...even I am disgusted when I see them.", "I hate them.", "Knowing that these insects are wandering around the hair turn people's stomachs". Participant L stated: "I am revolted by cleaning out nits. No matter how much I wash my hands, I feel as if they are always wandering on my hand".

Four mothers stated that they felt themselves scorned, especially in their social relations. Participant B explained: "I feel scorned as if I had done something very bad when my husband, his family and neighbours do not talk to me just because of this problem". Three mothers mentioned that they felt despair because they still had head lice and/or nits. Participant C stated: "I am clean, but (lice) are transmitted continuously from dirty people to us... I feel desperate when I think about this".

DISCUSSION

For successful head louse management, the participation of the infested individual, the other family members, school and school health personnel is very important. The present study shows that mothers felt that they are the only family members responsible

for treatment of a head louse infestation, and in the best case fathers only help to purchase the pediculicide. This is in accordance with other studies, which have shown that head louse management is, in practice, the sole responsibility of the mother (6, 13), while fathers, at best, participate in the financial aspects of the treatment (6).

Combing the hair with a louse comb is of paramount importance during and/or after the treatment with a pediculicide and for the removal of nits (3, 6, 7). However, this is sometimes very painful and time consuming, especially if the child's hair is long, curly or frizzy (8, 14, 15). This process becomes even more problematic in large families and in mothers without support (16). Moreover, where there are many people with head lice in school or in the family, re-infections are common (17). In the present study, mothers were responsible for large families, and with several infested individuals.

The cooperation of the child is very important for successful treatment (18). When children do not want their hair washed and dislike having nits removed from their scalp, treatment becomes even more difficult. Inappropriate combs or brushes can also damage the skin of a person (19). In this study, all mothers mentioned that their children were unwilling to cooperate before and during treatment. The majority of families stated that they washed their children's hair with boiling water, which could be very painful and harmful to the scalp (17). That kind of modality would increase the resistance of children to undergoing additional treatments.

Recently, it has been argued that stigma is one of the significant obstacles to health support and appropriate treatment (18, 20). Stigmatized people are excluded by large parts of society and accordingly they are exposed to discrimination (21). Studies indicate that children with head lice and their families are excluded by the social and school environment because they are considered to be dirty, and sometimes they are ridiculed by other children (1-3, 19). In this study, all mothers mentioned that they and their families were stigmatized and excluded from their neighbours' homes, and that their children were rejected by their school friends, playmates and siblings. Therefore, mothers felt that their social relationships became limited, which had a negative effect on the entire family. The fact that these families were not supported by their social environment, most probably negatively influenced the outcome of louse management (6).

The family income, membership in health insurance companies, educational level of the mother, life conditions, and low socio-economic conditions were additional factors influencing head louse control. Lack of higher education and the low family income can also lead to a failure of head louse management (4). The use of medicated shampoos and the washing of the clothes of infested individuals are expensive for low income families (1, 2, 22). In this study, half of the mothers reported that they could not buy the anti-lice medication since they did not have the necessary financial resources and accordingly they used alternative treatment modalities such as gasoline, which could have toxic effects. The use of alternative treatment modalities due to financial difficulties was also observed by Hensel (1).

Head louse infestations have negative psychological effects on children and their families, and can lead to trauma (3). This is especially true in certain cultures, where children and their mothers are stigmatized due to louse infestations, and the social exclusion can have a negative effect on the mothers (23). In the study, mothers noted that they and their children suffered psychologically as a result of unsuccessful treatments.

Several studies showed that children and their families experience embarrassment and shame, disgust and guilt when they were considered as being dirty (1, 3, 8, 9, 15, 19). In this study, mothers and children experienced similar psychological effects. They could not openly discuss the subject with their neighbours and/or school authorities (12). In a study, which analyzed the drawings of 3-6 year old children, approximately 43% of them used black crayon to draw lice or parts of the child's body, indicating sadness and desperation. Approximately 30% of the children drew lice on clothes or other body parts, suggesting that lice were part of their self-image and that they feel responsible for the infestation and for having done something wrong (24).

Children and their families may be exposed to verbal and physical violence, and are punished, scorned and accused when they are found to be infested with lice (1, 3, 10, 11, 14), and as a result fail to attend school (7, 19). All these might cause mothers and children to worry, feel upset and experience social distress both in the family and in the social environment (12). They may be worried that their lice and nits could be seen by others and could be transmitted to others (9, 11). In this study too, similar psychological effects, such as worry and social distress and psychological stress were experienced. This indicated how important it is to create a pleasant atmosphere where infested children and their families will not feel accused and where they could express their feelings easily (7, 10).

Head lice could cause feelings of being overwhelmed in families, especially among mothers (7, 25). Head louse management requires not only personal but also environmental hygiene. The same problem is experienced again when it is not treated, or if the appropriate treatment is not applied, and when mothers are left without support. In this study also, mothers reported that they were overwhelmed by this condition and experienced despair.

Limitations

This study has certain advantages and some limits. To the best of our knowledge, this is the first study indicating the mother's perspective regarding the difficulties experienced by families with qualitative data after unsuccessful head louse treatment. This study has some limitations, as it was conducted in a relatively small community with a particular socio-economic society in Turkey, in a given school and in a small sample of families.

CONCLUSION

Primary school children and their families, especially mothers, are confronted with psychological and social difficulties when children are diagnosed as being infested with head lice and when the subsequent treatment is unsuccessful. Therefore; (1) Larger studies including larger number of families of different educational, socio-economic and ethnical backgrounds should be conducted, while the role of the father must also be broadened (2) Head louse infestations should be a top priority of schools and health author-

ities and accordingly children should be periodically screened and properly treated; (3) More financial support should be given to families with limited recourses; (4) Cheap and effective treatment modalities should be developed; and (5) it is important to improve school health services for school children.

Conflict of Interest

No conflict of interest was declared by the authors.

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