

## Comparing The Educational Needs Of Nurses And Families With Corrosive Esophageal Burn Children: Card Sort Study

### Koroziv Özofagus Yanıklı Çocukların Hemşireleri Ve Ailelerinin Eğitim Gereksinimlerinin Karşılaştırılması: Card Sort Çalışması

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#### ÖZET

**Amaç:** Bu araştırma koroziv özofagus yanıklı çocukların hemşireleri ve ailelerinin eğitim gereksinimlerinin karşılaştırılması amacıyla kart sıralama çalışması olarak uygulanmıştır.

**Yöntem:** Tanımlayıcı olarak planlanan bu araştırma bir üniversite hastanesinin çocuk cerrahisi anabilim dalında 15 Eylül 2005-30 Mayıs 2006 tarihleri arasında yatarak izlenen 30 hasta-30 hemşire ile yapılmıştır. Veri toplama araçları olarak aile ve hemşirenin tanıtıcı özellikler anket formu ve literatür doğrultusunda hazırlanan koroziv yanığı ile ilgili eğitim konularının yer aldığı 12 soru kartı kullanılmıştır. Veriler araştırmacı tarafından Q metodundan yararlanılarak yüz yüze görüşme tekniği ile toplanmıştır. Verilerin analizinde SPSS 13.0 bilgisayar programı kullanılmıştır. Verilerin değerlendirilmesinde ise sayı, yüzde dağılımları, Cluster analizi ile dendrogramlar uygulanmıştır.

**Bulgular:** Ailelerin eğitim gereksinimleri ile hemşirelerin ailelere vermek istedikleri eğitim konuları arasında farklılıkların olduğu belirlenmiştir. Koroziv maddelerden yanık oluşturabilen piyasadaki diğer ürünler nelerdir? ile Özofagus yanığı sonrasında ilk yardım olarak ne yapmalıyım? soruları ailelerin çok önemli ve en çok merak ettikleri eğitim konularını oluştururken; hemşirelerin ise ailelere vermek istedikleri eğitim konularının Koroziv yanığın tedavi süreci neden uzun ve tekrarlı dilatasyon işlemlerinden oluşur? ile Çocuğum için yararı nedir? olduğu saptanmıştır.

**Uygulamada Kullanım:** Bu sonuçlara göre kliniklerde eğitim verilecek olan ailelerin, yapılması planlanan eğitim planına dahil edilme sürecinde eğitime başlamadan önce verecekleri eğitim konularının önceliklerinin belirlenmesi için card sort çalışmasının kullanılması önerilmektedir.

**Anahtar Kelimeler:** Card sort çalışması, koroziv özofagus yanığı, eğitim, aile, hemşire.

#### ABSTRACT

**Purpose:** This study aimed to comparing the educational needs of nurses and families with corrosive esophageal burn children: Card sort study.

**Method:** This study was done a descriptive to carried out on 30 patients and 30 nurses who were hospitalized in pediatric surgery of a university hospital from 15 September 2005 to 30 May 2006. As means of data collection family and nurses identification form and 12 question cards on which training subjects about corrosive burn prepared according to literature were taking place. The data were collected by researcher with face to face interview technique using cart sort study. Data analysis was done by SPSS 13.0 software using. Evaluation of the data number, percentage, dendrogram and cluster analysis was applied.

**Results:** It determined that there are differences between educational needs of families and training subjects that nurses want to give families. What are the other products in the market that can cause burns from corrosive materials?, What should I do as first aid after an esophageal burn with? questions are very important and most curious education subjects of families; training subjects that nurses want to give families, Why the treatment process of corrosive burns consists of long and repeated dilatation procedures ?, What is the benefit for my child ? it has been determined.

**Practice Implications:** It is recommended to use card sort study in order to determine priority of training subjects that families who will be trained clinics of included in planned training plan before starting the training.

**Keywords:** Card sort study, corrosive esophageal burn, education, family, nursing.

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**Atf/Citation:** Akçay Didişen, N., Conk, Z. (2021). Comparing The Educational Needs Of Nurses And Families With Corrosive Esophageal Burn Children: Card Sort Study. *Journal of Current Nursing Research*, 1(1),1-10.

## INTRODUCTION

Corrosive esophagus burns are still a common health problem in our country as in most developing countries (Göllü et al., 2016; Şen Tanrikulu et al., 2017; Gökalp et al., 2018). It is an important condition that causes morbidity and mortality although it causes many serious problems in the illness process (Peker, Urgancı and Kımıl, 2016). Especially young children form the risk group due to their developmental periods because they are too curious following the period feature and take everything they find to their mouths. Due to their easy accessibility, household cleaning products are one of the most commonly drunk corrosive substances and significant injuries to the esophagus and stomach may occur as a result of accidental drinking of these substances by children (Altay and Doğan, 2018).

Corrosive esophagus burns, account for the majority of applications to the children's emergency department (Peker, Urgancı and Kımıl, 2016; Bozlu and Kuyucu, 2018; Altay and Doğan, 2018). In this process, appropriate approach, early diagnosis and treatment are important for the prevention of life-threatening conditions (Bozlu and Kuyucu, 2018) Because corrosive substances alkaline or acid are generally considered as industrial chemicals, cleaning agents and drugs (Metin and Arıbaş, 2016; Şen Tanrikulu et al., 2017; Altay and Doğan, 2018). Clinical findings differ according to the acid or alkaline of the substance-exposed the formation of liquid or solid form, the amount of intake, the time of the patient's application but the severity of the situation continues to increase (Koçyiğit, Koçyiğit and Bayındır, 2015; Şen Tanrikulu et al., 2017; Altay and Doğan, 2018). In addition to causing serious damage to the area from the mouth to stomach as a result of drinking corrosive substances, esophagus burns are frequently seen in the acute period and the chronic period esophageal strychnine, stenosis, respiratory system symptoms, septicemia and

even cancer and death (Peker, Urgancı and Kımıl, 2016; Göllü et al., 2016). The treatment approach to be performed after taking corrosive substances different in acute and chronic humidity (Özgüner et al., 2002).

The treatment of the child who drinks corrosive substances is a continuous process that brings with it traumatic, patient and sequential interventions and long-term hospitalization in which all family members are affected. One of the most important approaches here is to prevent the child from drinking corrosive substances that is to proceed with protective measures. The best antidote "education" that is stated (Kondolot et al., 2009). It is reported that the packaging, labeling of corrosive substances, regulation of the environment, educating families on how and how to store household chemicals are important in the protection and are effective in reducing the occurrence of this problem (Küçük and Balcı, 2011; Peker, Urgancı and Kımıl, 2016).

Changes and developments in today's health system change the health care systems and structure but require that education be carried out in an understandable, systematic, quality/qualified and problem-solving manner (Şenyuva and Taşocak, 2007; Rock, 2009). The World Health Organization's Regional Office for Europe emphasized the importance of health education in achieving the "Health Goals for All" and emphasized that nurses are health educators and included the training of the patient and his family within the nurse's health education functions (Kaya, 2009).

Patient education aims to improve the sense of responsibility in individuals by making attitudes, behaviors and habits to cope with diseases and positively improve health but it is also a combination of learning experiences that protect health and help to develop a behavioral change in individuals (Avşar and Kaşıkçı, 2009). With all these changes and developments one of the most important independent roles of nurses in

providing care in clinics, educational roles, which reflect the scientific approach, in other words, the problem-solving process, the learning and teaching process is naturally integrated with the nursing process. Studies on patient education in our country show that this situation is not at the requested level. In particular, it has been emphasized that there are limitations inpatient training due to the lack of continuity in education, the lack of systematic, the high workloads of nurses in working environments, a large number of patients they care for in the clinic, the inability to adequately maintain nursing roles, the lack of standards and written records for patient education, lack of materials, equipment used in education, etc., and those who are done talking about systematic and unplanned education (Şenyuva and Taşocak, 2007).

Because education is an active and dynamic process. Regarding this subject, knowles mentioned the importance of the subject to be taught for the individual (Kurt, 2020). According to knowles, an individual or child emphasizes that they are close to what they need to know and be able to' to effectively deal with their real-life situations, where they learn the issues they consider important to them. When the training process is applied in each individual according to the same subject, the same order and the same degree of importance, the process can be considered very important by one group and insignificant by another group. Therefore, repetitions may occur, time management and effective training process may fail. In this case, the training phase given does not achieve its goal (Çetin, Çetinkaya and Korkmaz, 2016). Card sort study can be used to measure subjective areas that cannot be studied with traditional quantitative research tools to determine patients' priorities (Cross, 2005). This method is used in patient education to determine the priority issues of the group to be trained.

## MATERIAL AND METHODS

### The Study Aim

This study aimed to comparing the educational needs of nurses and families with corrosive esophageal burn children: Card sort study.

### Research Design

This research is a descriptive cross-sectional study and the data was collected between September 15, 2005 and May 30, 2006 in university hospital in İzmir.

### Population and Sampling

The population of the study consisted of the families of 103 patients who were hospitalized with corrosive esophageal burns in the Pediatric Surgery clinic of a university education and research hospital between September 15, 2005 and May 30, 2006, and 45 nurses who cared for them. This sample consisted of 30 nurses who agreed to participate in the study, who had children diagnosed with corrosive esophageal burns, who received inpatient treatment in the clinic and who worked at the specified hospital for at least 1 year and volunteered to participate in the study. This reflects a sufficient number considering the nature of card sort study as a small sample approach.

### Instrument for Data Collection

In the research, the data were collected using the individual and nurse introduction information form and card sort question cards.

**Family Identification Form:** This form, prepared by the researcher using literature knowledge (Luniewski, Reigle and White, 1999; Özgüner et al., 2002; Akbay and Uçar, 2003) and aimed at determining the sociodemographic characteristics of families, consists of 21 questions.

**Nurse Identification Form:** This form, prepared by the researcher using literature knowledge (Luniewski, Reigle and White, 1999; Özgüner et al., 2002; Akbay and Uçar, 2003) and aimed at determining the sociodemographic characteristics of nurses, consists of 8 questions.

**Q Sampling Phase and Question Cards:** Q method was developed in 1930 by British physician and psychologist William Stephenson to identify the priority subjects of patients in patient education (Cross, 2005; Red, 2010; Çetin, Çetinkaya and Korkmaz, 2016). Although this method is used in the measurement of subjective areas that cannot be studied with traditional quantitative research tools, the purpose of this methodology is to determine "how the individual feels" or "what is own opinion in response to the opinion of other individuals" (Cross, 2005; Çetin, Çetinkaya and Korkmaz, 2016). This application focuses on defining, understanding, and interpreting an individual's exception. The individual's opinions, attitudes and opinions on a specific subject area are also evaluated (Rugg and McGeorge, 1997; Sachs et al., 2003). It consists of cards that classify topics, with words or questions that include more important to less important in content (Sanders et al., 2005). When the individual is asked to sort the cards, the individual examines the educational issues written on the card, decides how important the subjects are to him/ her, helps to create his education plan (Luniewski, Reigle and White, 1999).

In our research, 12 question cards were used. Questions including educational topics taking the opinion of ten faculty members/staff specializing in Child Health and Diseases Nursing and from the provincial literature (Kondolot et al., 2009; Göllü et al., 2016; Bozlu and Kuyucu, 2018; Gökçalp et al., 2018).

#### **Collecting the Data**

This work is different and the cards are designed that there is a question on each card. Numbers on cards so as not to mislead individuals and it's not a given. Separate with family and nurses in data collection separate face-to-face interviews were conducted. Family and nurses all training subjects are given the same cards at the same time cards random on a desk in to make them see sorted. It is important to learn from both groups

prioritize the educational issues they find were asked. After each interview, the patient either by numerating the questions according to the nurse's ranking and recording. Data collection took average 20-25 minutes.

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#### **Ethical Consideration**

In order to carry out the research, the decision number of a Nursing School's Ethics Committee (07.10.2005/79) has been obtained with the approval of the ethics committee and then the application permission from the institution where the research will be carried out. In addition, verbal and written consents were obtained from the participants in the study.

#### **Data Analysis**

In our research, the data collection stage was provided by face-to-face interviews with families and nurses. Families and nurses were given the same cards and the cards were randomly sorted on to a desk to allow them to see all the training topics at the same time. Each family and the nurse who cares for them were asked to rank the educational issues they found important in order of priority (1-15). These interviews were attended by nurses from the patients 'rooms and nurses from the nurses' room. After each interview, the questions were numbered and recorded according to the order of the families or the nurse. The data collection time lasted an average of 15-20 minutes. Data analysis was done by SPSS 13.0

(Statistical Package for the Social Sciences 11.0) software using. Evaluation of the data number, percentage, dendrogram and cluster analysis was applied.

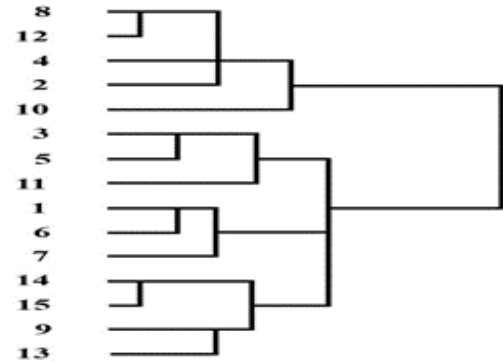
## RESULTS

When we looked at the introductory characteristics of the families included in the study, it was determined that 36.7% were between the ages of 30 and 34, 80% were primary-secondary graduates and 73.3% were housewives. It was determined that 86.7% of the families had a nuclear family structure and 43.3% had 2 children. It was determined that 53.4% of children who drank corrosive substances were 5-10 years old and 63.3% were male. When we examined the type of corrosive substances drunk, it was determined that 73.3% drank fat, 16.7% caustic, 6.7% pesticide and 3.3% badger. When we looked at the introductory characteristics of nurses, it was determined that 40% of them were between the ages of 35 and 39, 73.3% had an associate degree in nursing, 66.7% worked mostly during the daytime and 40% worked in this institution for 1-5 years.

The lengths of the cards that families sort using the card sort are given in Table 1. This table shows the proximity and length measurements of the card sort questions listed. Accordingly, "Card:15- How long will the treatment process take?" "Card:14- What should I pay attention to when we are discharged home after dilatation?" questions (416,000) when determining the minimum distance, "Card:4- What kind of protective measures can I take at home to prevent a repetition?" and "Card:5- What is the benefit of mold and dilatation therapy for my child?" maximum distance (2322,000) (Table 1). According to this dendrogram, it was determined that the card sort questions that families need education and are most curious about are 2-10-11 and 13. Accordingly "What are the other products on the market that can cause burns from corrosive substances?, What should I do as first aid after esophagus burn, What kind of damages

occur in which organs after the intake of corrosive substances? Can the child enter the pool or sea while in mold treatment?" Education issues have created very important card sort questions that they consider important by families. It was determined that the card sort questions they were less curious about were 1-7 and 14. Accordingly, "How can I feed my child with a tube?, How do I take care of the outer circumference of the tube in mold treatment? and what should I pay attention to when we are discharged home after dilatation?" subjects are designated by families as card sort questions that they consider less important (Figure 1).

With the cluster analysis applied, the cards are classified according to their severity ratings and classified as "very important", "moderately important" and "less important". In our research, the dendrogram of the cards that families sort for their educational needs is shown in Figure 1.

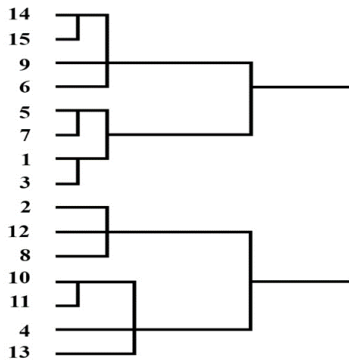


**Figure 1. Dendrogams of the cards that families sort for their educational needs**

In our research, when the proximity and length measurements of the card sort questions that nurses sort according to their training needs are examined, "Card:15- How long will the treatment process take?" "Card:14- What should I pay attention to when we are discharged home after dilatation?" (41,000) with a minimum distance, while the maximum distance (1919,000) was determined between the question "Card:5- What is the benefit of mold and dilatation therapy for my child?" and "Card:4- What preventive measures can I take at home to prevent recurrence?"

**Table 1. The lengths of the cards that families sort for their educational needs**

The lengths of the cards	Cart 1	Cart 2	Cart 3	Cart 4	Cart 5	Cart 6	Cart 7	Cart 8	Cart 9	Cart 10	Cart 11	Cart 12	Cart 13	Cart 14	Cart 15
Cart 1	.000	1662.000	578.000	1299.000	713.000	552.000	588.000	1403.000	1063.000	1189.000	1050.000	1491.000	666.000	765.000	569.000
Cart 2	1662.000	.000	1868.000	775.000	2341.000	1162.000	1396.000	575.000	1675.000	1033.000	1404.000	861.000	1484.000	1065.000	1547.000
Cart 3	578.000	1868.000	.000	1643.000	619.000	856.000	752.000	1855.000	875.000	1123.000	724.000	1903.000	786.000	915.000	809.000
Cart 4	1299.000	775.000	1643.000	.000	2322.000	1225.000	1143.000	600.000	1916.000	1102.000	1077.000	660.000	1621.000	1252.000	1508.000
Cart 5	713.000	2341.000	619.000	2322.000	.000	1357.000	951.000	2335.000	1042.000	1510.000	1035.000	2406.000	995.000	1006.000	812.000
Cart 6	552.000	1162.000	856.000	1225.000	1357.000	.000	790.000	1083.000	1147.000	1131.000	1568.000	1319.000	800.000	733.000	835.000
Cart 7	588.000	1396.000	752.000	1143.000	951.000	790.000	.000	1105.000	1271.000	1203.000	1280.000	1239.000	1094.000	863.000	869.000
Cart 8	1403.000	575.000	1855.000	600.000	2338.000	1083.000	1105.000	.000	2322.000	750.000	1853.000	236.000	1843.000	1420.000	1606.000
Cart 9	1063.000	1675.000	875.000	1916.000	1042.000	1147.000	1271.000	2322.000	.000	1812.000	1097.000	2304.000	711.000	900.000	690.000
Cart 10	1189.000	1033.000	1123.000	1102.000	1510.000	1131.000	1203.000	750.000	1812.000	.000	1091.000	943.000	1367.000	1122.000	1074.000
Cart 11	1050.000	1404.000	724.000	1077.000	1035.000	1568.000	1280.000	1853.000	1097.000	1091.000	.000	1907.000	984.000	979.000	1039.000
Cart 12	1491.000	861.000	1903.000	660.000	2405.000	1319.000	1239.000	236.000	2304.000	948.000	1907.000	.000	1863.000	1686.000	1720.000
Cart 13	666.000	1484.000	786.000	1621.000	995.000	800.000	1094.000	1843.000	711.000	1367.000	984.000	1863.000	.000	763.000	595.000
Cart 14	765.000	1065.000	915.000	1252.000	1005.000	733.000	863.000	1420.000	900.000	1122.000	979.000	1686.000	763.000	.000	416.000
Cart 15	569.000	1547.000	809.000	1508.000	812.000	835.000	869.000	1606.000	690.000	1074.000	1039.000	1720.000	595.000	416.000	.000

**Figure 2. Dendrograms of the cards that nurses sort for their training requirements**

The dendrogram of the cards that nurses sort for their training needs is shown in Figure 2. According to this dendrograms, it was determined that the card sort questions that nurses needed training and were most curious about were 6-7.-14. and 15th. Accordingly, “Why does the treatment process of corrosive burn consist of long and repetitive dilatation procedures?, What is its benefit for my child?, How do I take care of the outer circumference of the tube in mold treatment?, What should I pay attention to when we are discharged home after dilatation? and it

will last until the treatment process?” It has created very important card sort questions that nurses consider important. It was determined that the card sort questions they were less curious about were 2-4-11 and 13. “What are the other products on the market that can cause burns from corrosive substances?, What kind of protective measures can I take at home to prevent recurrence?, What kind of damages occur in which organs after the intake of corrosive substances?” subjects are designated by nurses as card sort questions that they consider less important (Figure 2). As a result of the research there was no statistically significant difference between the card rankings that the families covered by the study considered very important to them and the card rankings made by the nurses who provided care ( $p>0.05$ ).

## DISCUSSION

This study aimed to compare the educational needs of nurses and families in children with erosive esophageal burns. According to these results it is recommended to use the card sort study in order to determine the priority of the

training subjects that the families who will be trained in clinics will be included in the planned training plan especially before starting the training. Accidental poisonings are common between the ages of 5 and 10 and especially in boys in children's learning curiosity, increased physical activity (Rafeey et al., -2015). Altay and Doğan's (2018) study, the male/female gender ratio was 1.2 and it was determined that there was a greater frequency of corrosive substance in boys. This assessment can be associated with the fact that boys have more freedom of movement than girls (Altay and Doğan, 2018). Also, Akbay Öntürk and Uçar (2003) study found that they followed 323 poisoning cases and 16.7% drank caustic/corrosive substances. In the publications, it was also found that accidents due to corrosive substance intra-corrosive substances are often caused by alkalines. It is a fact that families with children during this age period keep these substances that may cause poisoning in places where their children can easily come in to contact are stored in non-drug containers. Children are not adequately controlled in these areas. Again the fact that the lids of drugs and other toxic substances are not produced with a safe cover application, which cannot be easily opened, can also be interpreted as another important factor (Bozlu and Kuyucu, 2018). In our research, it was determined that the age ranges, gender and substance characteristics of children who drank corrosive substances covered in the research were largely similar to the literature information. Patient education is seen by health workers as a requirement for the healing processes of patients in the clinics. Thanks to well-given training, patients can better understand their clinical condition and better manage their health (Marcus, 2014). Also education plays an important role in improving stress coping, reducing anxiety, shortening the hospital stay of patients as a result patient satisfaction (Gürlek and Yavuz, 2015). When training patients should be approached patient-centered and training should be given

patient-centered. In the training given the individual characteristics of the patients, they have the values, their family and environment, their disease perception status, their perspective on the disease, disease and hospital experiences and the importance order of the education subjects to be given great importance. Given health literacy, the increased use of educational materials as health education sources has also revealed new learning and teaching techniques. It should be noted that each individual is the only one training should be planned to take into account the needs of the individual. Pediatric nurses are the only professional group in health care organizations that handle the individual in all dimensions and environments. Therefore it has the most important role in health education-related activities (Öz Alkan, 2016).

Use different training methods to motivate the patient and family learn about health care behavior determine learning requirements, evaluate the learning drive and support them to take responsibility for educational activities. Card sort are one of the most important evaluation tools for individual participants of this training activity. In our research, which examined the training requirements of patients diagnosed with corrosive and the pediatric nurses who care for these patients with the card sort , "What are the other products on the market that can cause burns from corrosive substances?, What should I do as first aid after esophagus burn?, What kind of damages occur in which organs occur after the intake of corrosive substances?, Can the child enter the pool or sea while in mold treatment?, Why does the treatment process of corrosive burns consist of long and repetitive dilatation procedures?, What is the benefit for my child?, How do I take care of the outer circumference of the tube in mold treatment?, What should I pay attention to when we are discharged home after dilatation? and it will last until the treatment process?" card sort questions have been created by nurses as education subjects that they consider

very important. Therefore the fact that different issues are included in the important ranks for families and nurses shows us that the priorities of these two groups are different. In our research it was determined that there is a difference between the educational subjects that families consider most important to them and the educational subjects that the pediatric nurse who provides care considers important for that family similar to the other study findings in the literature (Çetin, Çetinkaya and Korkmaz 2016). Also when informing about poisonings in literature and social settings, it is seen that the issues that families have chosen are often included in the first place.

In our research, it is a fact that the nurses were not with the family at the time of the poisoning so they did not include these issues in their rankings. Also patients and families tend to learn the theory of the disease and caregivers and tend to teach after diagnosis. Providing an action plan that explains how, when, process and treatment protocols are provided to patients and their families who are cared for in clinics is a very important step towards successfully maintaining treatment at home. "What are the other products on the market that can cause burns from corrosive substances?, What should I do as first aid after esophagus burn? What kind of damage occurs in which organs after the intake of corrosive substances?" families care more about their subjects by nursing nurses. Therefore, it is a fact that families need to inform these issues in more detail regarding the sensitivity and guilt they experience concerning this accidental situation.

"Why does the treatment process of corrosive burn consist of long and repetitive dilatation procedures, what is its benefit for my child, How do I take care of the outer circumference of the tube in mold treatment?, What should I pay attention to when we are discharged home after dilatation? And it's going to take until the treatment process?" nurses paid more attention to

education issues than families. The ongoing treatment protocol of the child diagnosed with corrosive burns in clinics lasts for many years. The pediatric nurses who care for these patients will inevitably have this approach to the health problems that families may face in the future. Reducing the negative effects that these families in the care process of chronic disease may face in the future and providing alternative solutions for the maintenance and treatment of this child are among our independent roles and require this situation in education (Akçay Didisen, Cevik Özdemir and Keskin, 2017). Also with the question "How long will the treatment process take?" and "What should I pay attention to when we are discharged home after dilatation?" questions were determined as the educational subjects that both families and nurses brought repeatedly and were closest to each other in distance.

#### **Study limitations**

The fact that research conducted in descriptive study and a single center is one of the limitations of this study.

#### **CONCLUSIONS**

In our research, it was revealed that education subjects are not similar in both families and nurses and how important and necessary the use of the card sort is in determining the educational issues to be given in care environments. According to the results of the study, patients and nurses think differently investigation of causes education in patients with corrosive burn inclusion with the plan and priority before starting training determination of learning requirements, different study also sample groups with chronic disease, study of this on individuals who have just received a diagnosis of corrosive burn doing it again, by learning the card sort in healthcare personnel determining the importance ranking of patients before their training and it is recommended that their shape on education in this direction.



**Authorship contributions**

Concept: NAD; ZC

Design: NAD; ZC

Data collection or processing: NAD; ZC

Analysis or interpretation: NAD; ZC

Literature search: NAD; ZC

Writing: NAD; ZC

**KAYNAKLAR**

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**Declaration of conflicting interests**

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

**Funding**

The author(s) received no financial support for the research and/or authorship of this article.

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