

## PAPER DETAILS

TITLE: Laparoscopy training in Turkey through the view of residents; Turkish European Society of Residents in urology questionnaire

AUTHORS: Taha UÇAR,Mithat EKSI,Ferhat KESER,Mesrur Selçuk SILAY,Gokhan ATIS,Asif YILDIRIM,Turhan ÇASKURLU

PAGES: 28-33

ORIGINAL PDF URL: <https://dergipark.org.tr/tr/download/article-file/2182119>

## Laparoscopy training in Turkey through the view of residents; Turkish European Society of Residents in urology questionnaire

Asistanların gözünden Türkiye’de laparoskopi eğitimi: Türkiye European Society of Residents in Urology derneği anket çalışması

Taha Uçar<sup>1</sup> , Mithat Ekşi<sup>2</sup> , Ferhat Keser<sup>3</sup> , Mesrur Selçuk Sılay<sup>4</sup> , Asif Yıldırım<sup>3</sup> , Turhan Çaşkurlu<sup>5</sup> 

<sup>1</sup> Niğde Ömer Halis Demir University Research and Training Hospital, Department of Urology, Niğde, Turkey

<sup>2</sup> University of Health Sciences, Bakırköy Dr.Sadi Konuk Research and Training Hospital, Department of Urology, İstanbul, Turkey

<sup>3</sup> İstanbul Medeniyet University, Department of Urology, İstanbul, Turkey

<sup>4</sup> İstanbul Memorial Hospital, Department of Urology, İstanbul, Turkey

<sup>5</sup> İstanbul Atasehir Memorial Hospital, Department of Urology, İstanbul, Turkey

### ÖZET

**Amaç:** Laparoskopi günümüzde önem kazanan minimal invaziv bir cerrahi yöntemdir, Ancak Laparoskopide eğitiminde kullanılan yöntemlerin başarısı ve uzmanlık eğitimi tamamlamış üroloji asistanlarının bu cerrahi uygulama konusundaki yeterlilikleri belirsizdir. Çalışmamızda laparoskopi konusunda Türk üroloji asistanlarının yeterlilikleri, tercih ettikleri eğitim yöntemleri ve uygulanmakta olan eğitim modelleri oluşturulan anket ile sorgulanmış ve sunulmuştur.

**Gereç ve Yöntemler:** Çalışmamızda kullanılan laparoskopi anketi, daha öncesinde Belçika ESRU tarafından oluşturulan ve uygulanan anketin modifikasyonu ile oluşturuldu. Eğitimde kullanılan yöntemler, eğitimin yeterliliği ve eğitim konusundaki beklentiler odak noktası olarak belirlendi. Anketlerin tamamı Türkçe’ydi ve ESRU veritabanına kayıtlı olan toplamda 295 asistana gönderilen anketleri toplamda 70 ( %23) kişi yanıtladı. Anketlerin oluşturulması ve dağıtımında SurveyMonkey kullanıldı.

**Bulgular:** Anketimize en fazla katılım Marmara Bölgesin’ den ( % 39.29), en düşük katılım ise Güneydoğu Anadolu Bölgesi’nden ( % 5.36) gerçekleşti. Kliniklerin %91.07 sinde laparoskopi kullanılırken %8.93’ünde laparoskopi yapılmadığı saptandı. Anketimize katılan 1., 2., 3., 4., 5. yıl asistanlarının oranı sırasıyla %14, %23, %23, %12.7, %25 olarak belirlendi. Eğitim araştırma hastanesi ve Üniversite Hastanesi katılım oranları sırasıyla %46.77 ve %53.23 olarak saptandı.

Asistanların %28.57 lik bir kesimi kendisini uzmanlık döneminde laparoskopi yapabilecek kadar yeterli görürken, %71.43 lük kesiminin kendini bu konuda yeterli görmediği görüldü... Laparoskopi yapılan tüm kliniklerde gözlem ve asistans bir eğitim yöntemi olarak kullanılırken, %25’inde eğitim videoları, %3.57’inde hayvan alıştırma, %21.43’inde training box kullanımı, %26.79’inde primer cerrah olarak vakalara katılım eğitimin bir parçası olarak görüldü. %14.29’unda objektif sınav ve puanlama ile laparoskopi eğitimi değerlendirilirken, %85.71’inde sınav ve puanlamanın kullanılmadığı saptandı.

Eğitici ilgisizliği %33, daha az fırsat tanınması %53.57, sınırlı laparoskopik vaka sayısı %28.79, eğitici yetersizliği ise %30.36 oranında eğitimdeki en büyük sorunlar olarak belirlendi.

**Sonuç:** Laparoskopide asistan eğitimi, eğitim kurumlarına göre farklılık göstermekle birlikte bu konuda bir standardın yakalanamadığı görülmüştür. Eğitim gereksinimlerine uygun ve eğitim verme yeterliliğine sahip kurumlarca laparoskopi eğitiminin standardizasyonu ve uygulanması mevcut sorunların çözümünü sağlayabilir.

**Anahtar Kelimeler:** laparoskopi, asistan, eğitim

**Cite As:** Uçar T, Ekşi M, Keser F, Sılay MS, Yıldırım A, Çaşkurlu T. Laparoscopy training in Turkey through the view of residents; Turkish European Society of Residents in urology questionnaire. Endourol Bull. 2022;14(2):28-33. doi:10.54233/endouroloji.1055307


This study was approved by the Ethics Committee of Niğde Ömer Halisdemir University (Approval Number: 2022/14. Date: January 27, 2022). All research was performed in accordance with relevant guidelines/regulations, and informed consent was obtained from all participants.

**Corresponding Author:** Taha Uçar, Aşağı Kayabaşı Mah. Hastaneler Cd. 51100, Niğde Merkez, Niğde / Turkey

**Tel:** +90 535 304 47 36 **e-mail:** ucartaha@gmail.com

**Received:** January 9, 2022 - **Accepted:** January 30, 2022



This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited. 

## ABSTRACT

**Objective:** Laparoscopy is a minimal invasive surgery technique and getting more important nowadays. The success rate of the techniques used in laparoscopy education and the qualification of urology residents who finished their urology training, is unclear. In our study, qualification of Turkish urology residents for laparoscopy, the preferred educational techniques and the education models were investigated with a national survey.

**Material and Methods:** The laparoscopy questionnaire that is used in our study has been prepared by modification of a questionnaire which was formed by Belgium European Society of Residents in Urology. The techniques used in laparoscopy education, qualification of the education and the expectations from laparoscopy education were the main focus. All of the questions were Turkish and was sent to a total of 295 residents who are registered to the ESRU database. A total of 70 (23%) residents answered. SurveyMonkey was used for composing and distribution. All the data gathered from the survey was statistically investigated.

**Results:** The biggest contribution was from the Marmara Region (39.29%). Laparoscopy is used in 91,07% of the clinics all around Turkey. The distribution of the residents in regards of year of urology training were: 14% 1st year, 23% 2nd year, 23% 3rd year, 12.7% 4th year, 25% 5th year. Training and Research Hospital and University Hospital participation rates were 46.77% and 53.23% respectively. The rate of residents who feel they will become capable of doing laparoscopic surgery after their residency period finished, was 28.5% and 71.4% of the residents expressed the laparoscopic training they take would not be sufficient. Assistance and observing are used as a training method by nearly all residents (91.07%). In addition being the primary surgeon, training videos, training boxes, animal practices are used by residents with the rate of 26.7%, 25%, 21.4%, 3.5% respectively. According to participants, to be given less opportunity, educational disinterest and limited laparoscopic cases were defined as the major 3 problems in laparoscopy training.

**Conclusion:** The laparoscopy education differs between the urology clinics in Turkey without any standardization. An appropriate standardization of laparoscopy training can improve laparoscopy education and urology training

**Keywords:** laparoscopy, resident, training, education

## INTRODUCTION

Laparoscopic surgery has become the main approach instead of many open procedures. The minimal invasive nature of the laparoscopic surgery bring with the advantages of better cosmetic results and more acceptable length of hospital stay. Laparoscopic surgery is becoming more important day by day and it is now a part of urological daily practice.

Challenging learning progress and time is needed to have the crucial skills for laparoscopy. (1) Medicolegal issues and the desire of catching perfection are making the laparoscopic surgery training harder for residents. Because of the longer learning curve than open surgery, describing the best training method and applying the right method of training is becoming more important.

Residency programme includes theory and practice education which are performed to ensure residents have the best skills and knowledge. Optimal laparoscopic training is still not very clear and needed to be investigated more.

The difficulties, training methods, and resident's desire of learning laparoscopy were screened with the Turkish European Society of Residents in Urology (ESRU Turkey) laparoscopic education survey for defining the state of our national laparoscopic training program and revealing the difficulties of laparoscopic training.

## MATERIAL AND METHODS

Between March 2017 and April 2017 a validated laparoscopic surgery training questionnaire was performed by a total of 75 residents in Turkey. The questionnaire which is performed by Belgium ESRU has

been adapted for the Turkish residents by ESRU Turkey.(1) Questionnaires were created and replied in Turkish. Survey Monkey was used to create and spread the questionnaire and to evaluate all the data. All the study is designed and prepared in accordance with the Helsinki Declaration.

The questionnaire was sent to 300 residents in Turkey and 75 of them responded to the questionnaire with their own will and replying to all the questions was mandatory. Residents could only complete the survey just once thanks to the Survey Monkey protocol and all the questionnaires were replied on the internet. To increase the number of participants, a survey was sent by e-mail twice in a one-month period by ESRU Turkey.

The survey was formed by a total of 12 questions and it was possible to give more than one answer to some questions. The questionnaire was about laparoscopic training and the factors that affect the training program and demographic data is also recorded.

## RESULTS

Total of 75 participants involved our survey and the rates of first, second, third, fourth, fifth years of residents were 14%, 23%, 23%, 12.7%, 25% respectively. The rates of the residents from training and research hospitals were 46.77% and from the university were 53.23%. The participants were from all over the country and there were participants from all 7 geographical regions of Turkey.

Assistance and observing are used as a training method by nearly all residents (91.07%). In addition to being the primary surgeon, training videos, training boxes, and animal practices are used by residents with the rate of 26.7%, 25%, 21.4%, 3.5% respectively. Any model or virtual reality training were not to be used as a training method (Figure 1).

Exam or scoring systems were used as an objective evaluation method for 14.2% of participants. The other part which is 85.7% of residents were not been evaluated by an exam or scoring system. Primary performed laparoscopic surgery counts are recorded as 0-5, 5-10, 15-20, 20+ cases with the rate of 89.29%, 5.36%, 3.57%, 1.79% respectively. Laparoscopy training course is needed by 71.43% of participants as a training method versus 28.57% of participants who not needed.

Training box is used as a training method for 53.5% of participants who had it in their clinics, unfortunately 46.4% of participants were from a center without a training box. The rate of participants who had a training box and used it as effectively was 32.1%. Training box was thought as a good method of learning laparoscopy even for participants from the centers without training box and 95% of participants from these centers described training box as an effective and a helpful method. Training box mostly used by residents just once in a year with the rate of 67.86%, 14.29% of residents use the training box more than 4 times.

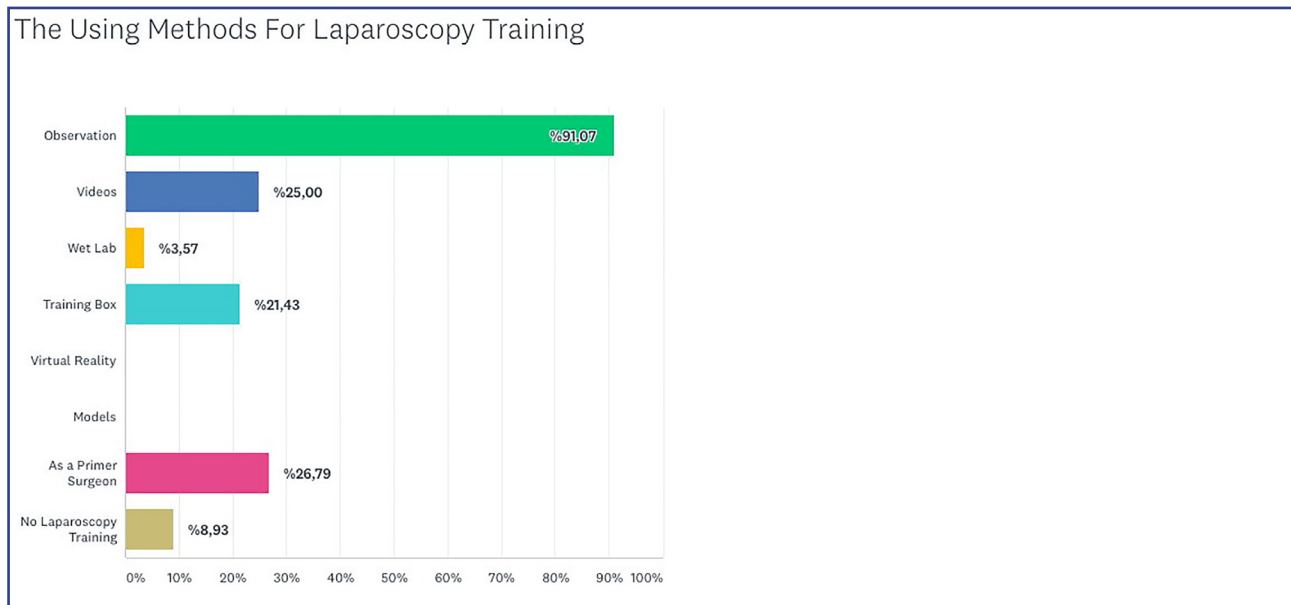
The rate of residents who feel they will become capable of doing laparoscopic surgery after their residency period finished, was 28.5% and 71.4% of the residents expressed the laparoscopic training they take would not be sufficient (Figure 2). According to participants, to be given less opportunity, educational disinterest and limited laparoscopic cases were defined as the major 3 problems in laparoscopy training.

## DISCUSSION

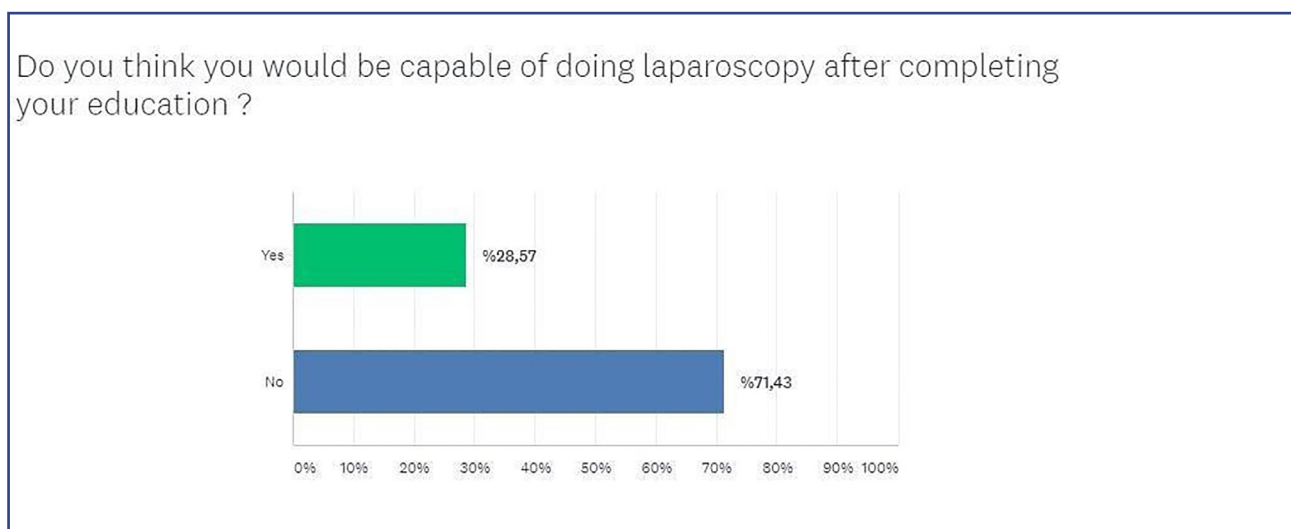
After the first laparoscopic nephrectomy was described by Clayman et al. (2) in 1991 laparoscopic urological surgery has become a routine treatment method in many urological centers due to the advantages it provides. The most common urological laparoscopic surgeries are total nephrectomy (32%) and renal cyst marsupialization (21%); there are no urological laparoscopic surgeries which are routinely used in daily practice, can be easily applied during learning curve, and does not require advanced skills like "laparoscopic cholecystectomy" and "laparoscopic appendectomy" performed by general surgeons (3). This makes the training of urological laparoscopic surgery more complicated and extends the learning curve.

In the United States, the rate of a Urology resident to reach conventional laparoscopy was reported to be 100% (4), which was 74% in Europe and was detected to be 91% in our study. (5, 6) The number of such applications has increased in the clinics that provide specialization training due to the interest that has been attracted by laparoscopic urology and organized courses which provided the first step in training of Laparoscopic Urological Surgery with assistance and observation.

**Figure 1.** The using methods for laparoscopy training



**Figure 2.** Do you think you would be capable of doing laparoscopy after completing your education?



Only 14.2% of the participants in our study were involved in an evaluation questioning their laparoscopy training during their residency period. Laparoscopy training has been proved to be different from classical surgical training as a consequence of many reasons such as lack of sense of depth, the necessity of dual hand coordinated operation, the difficulty of movement, and “fulcrum” effect (7). Stefanidis et al. (8) demonstrate that people who had a systematic laparoscopy training used their abilities better during the operation and their task performances were better. Therefore intermittent questioning of laparoscopic skills and knowledge of assistants will allow more objective evaluation of the education given to them.

It was found that a resident in the last year of education in Canada performed more than 20 laparoscopic nephrectomies per year and no last year’s assistant in Belgium performed more than 10 laparoscopic nephrectomies per year (9,10). Although there was a difference in years of training of the participants who included in this study, the ratio of those who applied more than 20 laparoscopic surgeries per year was determined as 1.7%. It has been shown that residents who have access to laparoscopy laboratories or laparoscopy box-training devices and practice on these simulators are particularly successful during operation in terms of making sutures.(7) Many previous studies have shown that training box shortens the learning

curve and these practical applications can be transferred to the operation room (11,12). 53.5% of the assistants who participated in this study had training boxes in their clinics and 95% regard these boxes as an educational tool. However, only 14.2% of the participants were practicing these instruments more than 4 times a year. Supe et al. (13) have shown that practicing on training boxes on a systematic basis, based largely on a gradual and talent-building approach rather than traditional, opportunistic training allows the laparoscopic skills to develop better and gaining more self-confidence.

Shay et al. (14) compared two groups who received or didn't receive laparoscopic training during their residency; the group who received training applied surgery at a rate of 69% while this rate was 34% in the group who did not receive training. Only 28.5% of the residents included in this study thought that they will be able to perform laparoscopic surgery at the end of their specialty training.

All these results suggest that laparoscopy training should be systematically taught and intermittently questioned to promote applicability and widespread use of laparoscopic methods which have many advantages to open operations for both patients and surgeons.

Learning curve is an another important issue for laparoscopic surgeries. Learning curve for a laparoscopic nephrectomy completed after 50 initial procedures according to Kanno et al. (15). For single-port laparoscopic surgeries learning curve has been reached after 30 cases in experienced hands.(16) In our study just 1.97% of residents performed 20+ surgeries which is not sufficient for reaching learning curve so proper resident training programs should be designed according to this learning curve.

## CONCLUSION

Laparoscopic surgery is a widely used minimal invasive surgery in urology. The procedure should be a part of education and training programs should be designed according to learning curve.

**Conflict of Interest:** The authors declare to have no conflicts of interest.

**Financial Disclosure:** The authors declared that this study has received no financial support.

**Ethical Approval:** The study was approved by the Ethics Committee of Niğde Ömer Halisdemir University (Approval Number: 2022/14. Date: January 27,2022). The study protocol conformed to the ethical guidelines of the Helsinki Declaration.

**Author Contributions:** Conception and design; Uçar T; Ekşi M, Data acquisition; Uçar T; Sılay MS, Data analysis and interpretation; Uçar T; Şendoğan F; Ekşi M, Drafting the manuscript; Uçar T; Şendoğan F; Ekşi M, Critical revision of the manuscript for scientific and factual content; Şendoğan F; Ekşi M; Sılay MS; Yıldırım A; Çaçkurlu T, Statistical analysis; Uçar T; Ekşi M, Supervision; Çaçkurlu T.

## REFERENCES

1. Navez, B. and Penninckx, F. Laparoscopic training: results of a Belgian survey in trainees. Belgian Group for Endoscopic Surgery (BGES). Acta chirurgica Belgica. 1999; 99(2):53-58.
2. Clayman RV, Kavoussi LR, Soper NJ, Dierks SM, Merety KS, Darcy MD et al. Laparoscopic Nephrectomy. N Engl J Med. 1991; 324(19):1370-1371.
3. Autorino R, Haber GP, Stein RJ, Rane A, De Sio M, White MA, et al. Laparoscopic training in urology: critical analysis of current evidence. Journal of Endourology. 2010; 24(9):1377-1390.
4. Duchene DA, Moizadeh A, Gill IS, Clayman RV, Winfield HN. Survey of residency training in laparoscopic and robotic surgery. J Urol. 2006; 176:2158-2166
5. Laguna, M.P., Schreuders, L.C., Rassweiler, J.J., Abbou, C.C., Van Velthoven, R., Janetschek et al. Development of laparoscopic surgery and training facilities in Europe: results of a survey of the European Society of Uro-Technology (ESUT). Eur Urol. 2005; 47:346-351
6. Furriel FT, Laguna MP, Figueiredo AJ, Nunes PT, Rassweiler JJ. Training of European urology residents in

laparoscopy: results of a pan-European survey. *BJU Int.* 2013; 112(8):1223-1228.

7. Kroeze SG, Mayer EK, Chopra S, Aggarwal R, Darzi A, Patel A. Assessment of laparoscopic suturing skills of urology residents: a pan-European study. *Eur Urol.* 2009; 56: 865–872.
8. Stefanidis D, Acker C, Heniford BT. Proficiency-based laparoscopic simulator training leads to improved operating room skill that is resistant to decay. *Surg Innov.* 2008; 15(1):69–73.
9. Preston MA, Blew BD, Breau RH, Beiko D, Oake SJ, Watterson JD. Survey of senior resident training in urologic laparoscopy, robotics and endourology surgery in Canada. *Can Urol Assoc J.* 2010; 4(1):42–46.
10. De Win G, Everaerts W, De Ridder D, Peeraer G. Laparoscopy training in Belgium: results from a nationwide survey, in urology, gynecology, and general surgery residents. *Adv Med Educ Pract.* 2015; 6:55-63.
11. Korndorffer Jr JR, Dunne JB, Sierra R, Stefanidis D, Touchard CL, Scott DJ. Simulator training for laparoscopic suturing using performance goals translates to the operating room. *J Am Coll Surg.* 2005; 201:23–29.
12. Ehdaie B, Tracy C, Reynolds C, Cung B, Thomas K, Floyd T, Schenkman N. Evaluation of laparoscopic curricula in American urology residency training. *J Endourol.* 2011; 25(11):1805-1810.
13. Supe A, Prabhu R, Harris I, Downing S, Tekian A. Structured training on box trainers for first-year surgical residents: does it improve retention of laparoscopic skills? A randomized controlled study. *J Surg Educ.* 2012; 69: 624–632.
14. Shay, B. F., Thomas, R. and Monga, M.: Urology practice patterns after residency training in laparoscopy. *J Endourol.* 2002;16: 251.
15. Kanno, T., Shichiri, Y., Oida, T., Kanamaru, H., Takao, N., Shimizu, Y. Complications and the learning curve for a laparoscopic nephrectomy at a single institution. *International Journal of Urology.* 13:101-104.
16. Abdel-Karim AM, Elhenawy IM, Eid AA, Yahia E, Elsalmy SA. Laparoendoscopic single-site surgery for the treatment of different urological pathologies: Defining the learning curve of an experienced laparoscopist. *Arab journal of urology.* 2017; 15(3):187-193.