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Research Article

SURGEONS ATTITUDES TOWARDS LAPAROSCOPIC TRAINING IN PAKISTAN

Sabih Nofal¹, Neelum Wajid², Amna Javed³, Sabeela Qasim Ahmad⁴,
Abdullah Zaka Cheema⁵, Hira Butt⁶, Nauman Akbar⁷

Department of General Surgery Lahore General Hospital Lahore ^{1, 2, 3, 5, 6, 7}, National Health
Services, United Kingdom ⁴

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Abstract:

Objective: To assess the opinions of surgeons of Pakistan with respect to Laparoscopic Surgical Training.

Methodology: A cross sectional study was conducted at Department of General Surgery, Lahore General Hospital, Lahore via one on one and group discussions with surgeons at various teaching hospitals in a major city of Pakistan. Different variables were assessed using the Likert Scoring System; 5 – Strongly Agree, 4 – Agree, 3 – Neutral, 2 – Disagree, 1 – Strongly Disagree. Recognized Residents and Consultants of General Surgery were asked to fill the questionnaire.

Results: There were 87 responders (78 residents and 9 consultants). A majority (73.6%) Strongly agreed that Laparoscopic Training is essential for surgical residents and mostly (52.9%) were of the view that current state training is unsatisfactory. Laparoscopic Cholecystectomy and Laparoscopic Appendectomy were considered the procedures most important during training. Residents wished to perform 19 Cholecystectomies by the end of their training. 32 Cholecystectomies were thought to be required for competency.

Conclusions: The importance of laparoscopic surgery is well recognized and so is the dissatisfaction with regards to the system of training. Conformity exists on the various hurdles and barriers to efficient training, and the methods to improve our current system of training. This knowledge will be invaluable in refining training guidelines in various institutes of the country.

Key Words: Surgical Training, Laparoscopic Training, Laparoscopic Surgeon Opinion/Attitude.

Corresponding author:

Dr. Sabih Nofal – M.B.B.S,

Medical Officer,

Department of General Surgery Lahore General Hospital Lahore. 03314116277

Email: drsabih@gmail.com.

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INTRODUCTION:

Surgery is a skill ^[1]. It is the art of manipulating human body tissues to your desires, so that an objective can be achieved. Over the years, techniques, instruments and materials have changed drastically, but the correct method of handling human tissue has remained the same ^[2]. It is a skill that has been handed down the generations from mentor to apprentice ^[3], much similar to other crafts like painting and sculpting.

The introduction of Laparoscopic Surgery changed the outlook of modern surgical practice. Methods of surgeries which had been adopted and perfected over almost a century were questioned by this new innovation ^[4]. As Laparoscopic Surgery has become common, so has an increased emphasis on Laparoscopic Education. General Surgery residency usually provides a low exposure to Advanced Laparoscopic Procedures ^[5]. So a question arises as to how good, are the general surgeons in facilitating the junior surgeons and residents to follow a pathway which would enable them to become skilled Laparoscopic Surgeons?

Laparoscopic surgery requires a different set of skills as compared to open surgery ^[6]. Training and experience in the procedure lead to a decrease in incidence of complications ^[7]. Difficulties faced in laparoscopic surgery which are not there in open surgery are loss of tactile impulses from finger tips, loss of depth perception in the two dimensional image provided by the laparoscope and loss of peripheral field of vision⁸. Since this method of surgery relies on technology, it is vital that the surgeon be well aware of the methods of trouble shooting electrical problems from these machines ^[8].

There is little data available regarding the current status of the quality of training of laparoscopic surgery in the country. This study was aimed to find out opinions of surgeons with regards to different aspects of laparoscopic training, especially identifying the hurdles and barriers to Laparoscopic Training and recognizing different improvement

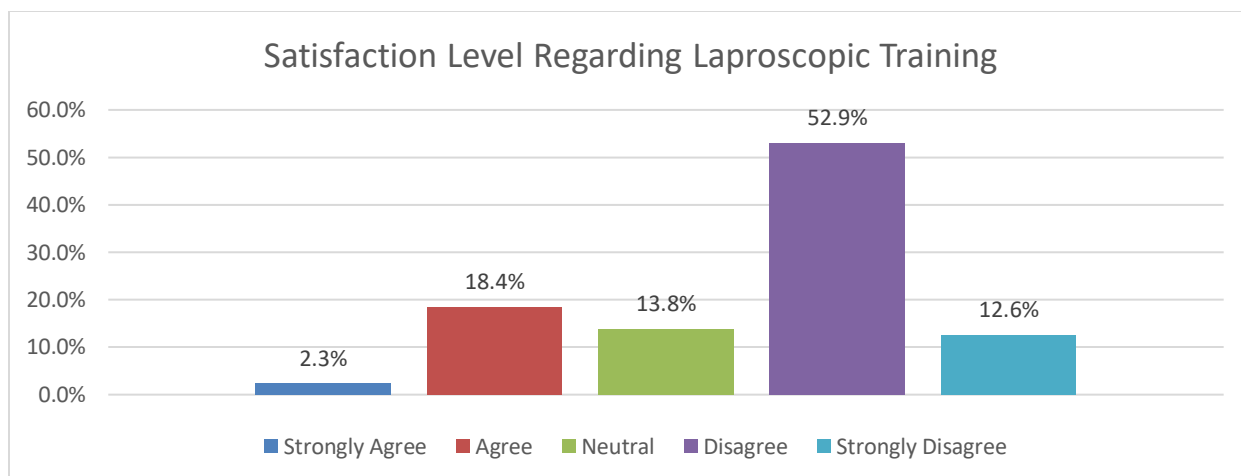
strategies to overcome those hurdles. The Data presented will be useful in improving training guidelines in different institutions of the country and thus enable future Surgeons to be better equipped to face the challenges of Minimal Invasive Surgery.

METHODOLOGY:

Doctors who are in a recognized post graduate residency program or who have already completed their Fellowship in General Surgery were selected to participate in the study. The study was carried out with the help of a carefully designed Questionnaire (Annex A) which assessed different variables with the help of Likert Scale Scoring System: 5 – Strongly Agree, 4 – Agree, 3 – Neutral, 2 – Disagree, 1 – Strongly Disagree. The authors held one-on-one and group discussions with surgical residents and consultants in Four Major Government Tertiary Care Teaching Centers of Lahore, Pakistan and One Private Teaching Hospital. All five institutes were running recognized post graduate residency programs and were actively performing various Laparoscopic Surgeries. Data collection was carried out in a 3 month period. The Data collected was analyzed with the help of IBM SPSS Statistics 20. No identifying information such as name, email address or institute of the participants was recorded. Every participant was issued a Consent/Privacy Statement (Annex B) along with the questionnaire. The participation in the research was voluntary. The participants had the option to withdraw participation at any time by leaving any question or the whole questionnaire blank.

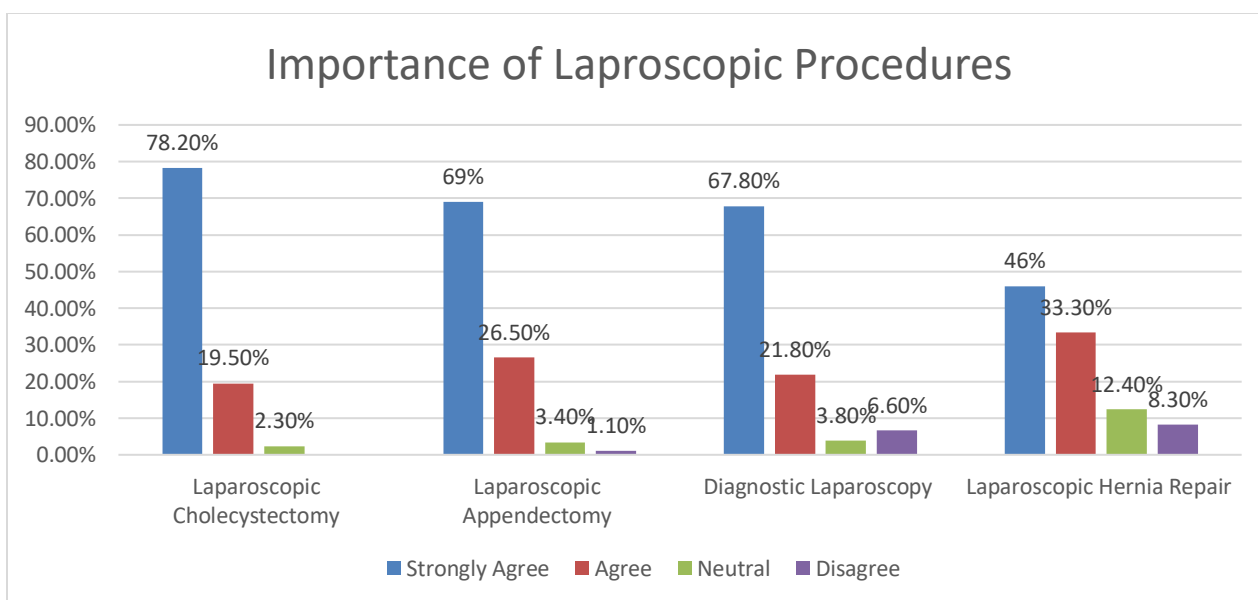
RESULTS

A total of 98 questionnaires were circulated out of which 87 were returned completed (Response rate of 88.77%). 78 Residents and 9 consultants participated in the study. In response to the question **“In your opinion, is Laparoscopic Training essential for Surgical Residents?”** 73.6% of the responders Strongly Agreed whereas 26.4% Agreed. None of the participants selected “Neutral”, “Disagree” or “Strongly Disagree”.



When asked **‘Do you feel the current system of training in Laparoscopy is satisfactory?’**, an overwhelming majority of the participants Disagreed (52.9%) and Strongly Disagreed (12.6%). In response to the question **‘Which Laparoscopic procedures should be taught to surgical residents’**, the data showed the following order of perceived importance:

Laparoscopic Cholecystectomy (Strongly Agree 78.2% & Agree 19.5%), Laparoscopic Appendectomy (Strongly Agree 69% & Agree 26.4%), Diagnostic Laparoscopy (Strongly Agree 67.8% & Agree 21.8%) and Laparoscopic Hernia Repair (Strongly Agree 46% & Agree 33.3%). The following figure illustrates the responses:



The participants were asked **‘What do you think are the hurdles/barriers to laparoscopic training of surgical residents?’** They identified ‘Lack of Encouragement’ (41.4% strongly Agree & 35.6% Agree) and ‘Lack of Confidence from seniors’ (42.5% strongly Agree & 32.2% Agree) as the most commonly related factors. Other major hurdles identified were: ‘Lack of equipment’ (29.9% Strongly Agree & 32.2% Agree), ‘Difficult Learning Curve’ (25.3% Strongly Agree & 26.4% Agree) and

‘Fear of Complications’ (24.1% Strongly Agree & 26.4% Agree).

The **factor most likely to encourage laparoscopic training** was felt to be availability of a Laparoscopic Skills Laboratory (74.7% Strongly Agree & 21.8% Agree, Total 96.5%) followed by ‘Send Residents to Formal Laparoscopy Training Course’ (Strongly Agree 47.1% & Agree 40.2%, Total 87.3%) and Mentoring During Laparoscopic Surgery (Strongly Agree 50.6% Agree 35.6%, Total 86.2%).

In response to the question **‘Is laparoscopic training part of your official training curriculum?’** 70.1 % answered ‘Yes’ and 29.9% responded ‘No’. 88.5 % of Surgeons **desired to perform** more laparoscopic surgeries in the future and 11.5% wanted to do more open surgeries. An overwhelming 96.6 % of surgeons preferred Laparoscopic Surgery as the **procedure of choice for themselves or their spouse** while only 3.4 % preferred open surgery.

A mean of 4.62 (SD 2.74) members of faculty were actively involved in performing Laparoscopic Surgeries out of a mean total faculty strength of 6.84 (SD 2.72) per department (67.44%). Residents hoped to perform an average of 19.03 (SD 22.38) Laparoscopic Cholecystectomies by the end of their training. The consultants surveyed had performed a mean of 209.44 Laparoscopic Cholecystectomies as a primary surgeon whereas residents had performed a mean of 0.55 procedures. Only 13 residents had performed an independent Laparoscopic Cholecystectomy (out of 78, 16.66%). An average of 32 (SD 51.01) Laparoscopic Cholecystectomies were thought to be required for a surgeon to feel confident and competent about the procedure.

DISCUSSION:

Open Cholecystectomy had been a well-established procedure of choice for symptomatic gallstones for 100 years when Laparoscopic Surgery was introduced to the world by Dr. Eric Muhe (Boblingen, Germany in 1985) and Dr. Phillippe Mouret (Lyon, France in 1987) when the first Laparoscopic Cholecystectomies were done ^[9]. In 1988, two groups of American Surgeons performed Laparoscopic Cholecystectomies and by 1990, 10% of Cholecystectomies were being performed laparoscopically in the United States ^[9]. This number rose to 88% by 2006 ^[9].

So this means that within 5 years of emergence of Laparoscopic Cholecystectomy on another continent, the health care system of United States of America adopted a new innovation and established a system which enabled their surgeons to start performing Laparoscopic Surgeries on 10 % of the patients presenting with symptomatic gallstone disease. And all this happened 2 to 3 decades ago.

On the other hand, in Pakistan, uptake of Laparoscopic Culture has been a slow process which has been majorly sporadic and unplanned. While today modern healthcare systems are performing close to 90 % of Cholecystectomies Laparoscopically and are discussing about merits of introducing Advanced Laparoscopic procedures (thoracoscopic

sympathectomy and laparoscopic rectopexy) ^[8] into early surgical training, in our country, Junior Surgeons are mostly struggling to perform laparoscopic cholecystectomies. Resident exposure to performing Laparoscopic Surgeries is minimal, if any.

The desire to learn and perform Laparoscopic Surgeries is very high in the sample population. Most surgeons would prefer Laparoscopic surgeries for themselves or their spouse. A majority also recognized Laparoscopic Surgical Training as an essential component of Surgical Training of Residents. The presence of such overwhelming desires accompanied by the declaration that the current system of training is not satisfactory is a little distressing. A surprisingly large number of responders said that Laparoscopic surgery is not part of their official training curriculum (29.9%). What makes this assertion all the more startling is the fact that all participants were associated with Post Graduate Residency surgical programs in Pakistan which have Laparoscopic Surgery as part of their curriculum.

The two major hurdles identified were ‘Lack of Confidence from seniors’ and ‘Lack of Encouragement’. Other hurdles to Laparoscopic Training were Lack of Equipment, Difficult Learning Curve and Fear of Complications. A large number of responders disagreed that ‘Insufficient Patient Volume’ was a contributory factor (32.2% Disagree and 27.6% Strongly Disagree).

Laparoscopic Skills Laboratory was identified as the factor most likely to overcome these hurdles, followed by Formal Laparoscopy Training Course and Mentoring during Surgery. In order to expose residents and junior surgeons to basic laparoscopic skills, relatively cost effective training boxes, also known as ‘lap trainers’, can be utilized by surgery departments to provide skills, such as basic hand-eye coordination skills, grasping and cutting as well as more specific techniques including the use of diathermy on animal tissue, clip application and suturing. A low cost home-made simulator can also be created ^[10].

Laparoscopic Surgical Centers have been established in many countries where residents experience dedicated laparoscopic surgical training ^[11]. However no such facility is available in Pakistan. Occasionally, workshops with training sessions are organized by commercial companies to promote new or existing technologies. These are principally aimed at surgeons in private practice. While partiality may exist due to

their commercial nature, they allow exposure to emerging technologies and offer valuable ongoing training. In many developed nations of the world, regulatory bodies have been established that ensure guidelines for laparoscopic training and issue certifications of competence to maintain quality control ^[12].

In a similar study conducted in South Africa in 2007^[8], it was established that laparoscopic training is necessary for surgical residents. Laparoscopic training was observed as being average. Cholecystectomy, diagnostic laparoscopy, anti-reflux surgery and appendectomy were the laparoscopic procedures perceived most important for training. The average number of laparoscopic cholecystectomies required for proficiency was thought to be 24. The major hurdle to training was lack of equipment and theatre time constraints, and the majority felt that laparoscopic skills laboratories and laparoscopy training seminars/courses would improve training ^[8]. The improvement strategies discussed above fail to address the two most common hurdles identified by this study; 'Lack of Confidence from seniors' and 'Lack of Encouragement'. An exploratory case study carried out in another lower-middle-income world country ^[11] has identified the structure of funding, hierarchical nature of local surgical culture, and expertise and skill associated with a change in technique as other significant barriers for the uptake of Laparoscopic Surgery. No similar research has been conducted in our country. One of the major drawbacks of this study is that the sample population belongs to only one major city of Pakistan. Getting views of surgeons on a national level would be invaluable. Further research into the psychosocial and cultural aspects of laparoscopic training should be done to address major hurdles being faced by junior surgeons. As a system we have fallen behind modern healthcare systems of the world, and significant research, thought and effort is required to keep ourselves abreast in terms of Laparoscopic skill.

CONCLUSIONS: The importance of laparoscopic surgery is well recognized and so is the dissatisfaction with regards to the system of training. Conformity exists on the various hurdles and barriers to efficient training, and the methods to improve our current system of training. This knowledge will be invaluable in refining training guidelines in various institutes of the country.

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