Short Report

Training general surgery residents in paediatric surgery

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Abstract

Children have special needs as surgical patients and are best treated by specialist Paediatric Surgeons, who are confined to large centers especially in developing countries. General Surgeons are thus required to fill in the lacunae. In order to assess whether general surgical trainees receive adequate training for treating children in Pakistan, a cross-sectional survey was conducted at recognized teaching hospitals in Karachi among residents and fellows. Responses were received from 90.4% of surveyed candidates. Only 25% of the respondents were aware of the CPSP guidelines for training with paediatric patients. Nearly half planned to include paediatric patients in their practice. Most respondents believed that training by their programmes was adequate in this regard. In contrast most did not feel confident in operating on paediatric patients. In conclusion current training paradigm does not give General Surgery residents' sufficient confidence in dealing with surgical problems in children.

Introduction

Surgical care of children requires focus on their peculiar needs as patients. It involves understanding of differences in presentation and management. Paediatric surgeons are specially trained and thus attuned for this. Their services however, are confined to larger centres as dictated by cost considerations and other logistics. This is especially true in a large number of Asian countries including Pakistan where the mean number of paediatric surgeons ranges from 0.1 to 0.5 per million population[1] as compared to 2 per million recommended by the American Paediatric Surgeons Association Manpower Task Force.[2]

Arguably there is a set of surgical problems of children that can be accommodated in the realm of expertise of a General surgeon.[3] General surgeons in training are thus required to learn the principles and skills of dealing with problems in children. Training general surgery residents is also a defined goal for paediatric surgeons.[4]

This study was conducted to delineate organization of current training of General Surgeons in dealing with paediatric problems in Pakistan and adequacy of this training based on trainees' self assessment.

Employing a survey we focused on:

1. The organization of training programmes.
2. Residents' perception about their training.
3. Level of confidence the training imparted.

Methods and Results

A survey form containing twenty-one questions was distributed among general surgery residents and fellows in several institutions of Karachi. The form comprised of two sections.

The first section dealt with the queries regarding residents' institution and residency programme. Queries relating to perception about adequacy of training were scored on Likert Scale (agree=1, partially agree=2, do not agree=3) in this section. Other queries defined number of beds in the institution, presence of an independent paediatric surgery department, and estimate of paediatric caseload among others.

The second section was related to residents' confidence and self-assessment of ability in dealing with children as surgical patients. Confidence and competence in aspects of patient care were scored on Likert scale (agree=1, partially agree=2, do not agree=3 and adequate=1, fair=2, none=3) in this section. For the sake of comparison we adopted the list of common paediatric surgical procedures as reviewed by the Education Committee of Canadian Association of Paediatric Surgeons and reported by Poenaru et al earlier.[4]

Among other questions residents completion of paediatric surgery rotation was inquired as a categorical binary variable (yes/no) along with year of residency when rotation was performed and duration of rotation. Pearson's chi-square test was used to define significant difference in self-assessment of confidence and competence in relation to year of training when paediatric surgery rotation was performed. Statistical analyses were performed using SPSS version 11.0.

Table 1. Residents' Perception of Training (n=36).

	Agree	Partially Agree	Do Not Agree
Exposure to Paediatric Patients is Adequate	30.6 % (n=11)	58.3% (n=21)	11.1% (n=4)
Training in General Surgical Management is Adequate	58.3% (n=21)	33.3% (n=12)	8.3% (n=3)
Training in Specific Operative Management is Adequate	41.6% (n=15)	44.4% (n=16)	13.8% (n=5)

Table 2. Residents' Confidence in Managing Paediatric Patients (n=36).

	Agree	Partially Agree	Do Not Agree
Confident in General Surgical Management	30.6% (n=11)	52.8% (n=19)	16.6% (n=6)
Confident in Specific Operative Management	22.2% (n=8)	36.1% (n=13)	36.1% (n=13)

There were a total of 38 respondents to the 42 forms distributed (response 90.4 %). Two incomplete forms were excluded. The 36 respondents included 5 fellows and 31 residents who had either completed or were training in general surgical residency programmes. Less than a third (27.8 %, n=10) were females and rest were males (72.2%, n=26).

Three of the five institutions, where survey was conducted had an independent paediatric surgery department and represented 72.2% (n=26) of the respondents. Twenty four of these 26 respondents had completed paediatric surgery rotation. Out of these, 20.8% (n=5) had done so in first year of training, 37.5% (n=9) in second year, 29.2% (n=7) in third year and 12.5% (n=3) in fourth year. The duration of rotation ranged between 2 and 12 months with median of 3 months.

Ten remaining respondents belonged to institutions where there was no independent paediatric surgery department. Asked to mention approximate percentage of paediatric patients in their practice yielded a mean of 24.8$\pm$12.6.

Twenty seven (75%) of the respondents believed that their programme defined specific learning objectives as regards to management of paediatric patients. Nine (25%) were aware of the College of Physicians and Surgeons Pakistan's guideline as regards to training with paediatric patients. Seventeen (47.2%) planned to practice with paediatric patients after completing training.

Residents' perception of training has been detailed in Table 1. Most respondents either agreed or partially agreed that exposure, training in general surgical and operative management of paediatric patients was adequate in their programme.

Residents' confidence in managing paediatric patients is detailed in Table 2. More respondents were confident about general surgical management than operative management.

In order to see association of confidence achieved with the year of residency when paediatric surgery rotation was performed and duration of rotation Pearson Chi-Square test was applied. No statistically significant association was seen.

The survey included a list of procedures and respondents were asked to rank the level of confidence they felt in performing each of these. Most trainees were confident in performing procedures that are cross-over from general surgery including incision and drainage (73.91 %), circumcision (65.23%), appendectomy (60.86 %) and rigid sigmoidoscopy (47.82%) as opposed to common core paediatric surgery procedures including orchidopexy (17.39%), pyloromyotomy (17.39%), inguinal herniotomy (21.73%), umbilical hernia repair (26.08%) and rectal polypectomy (34.78%) where they clearly lacked confidence.

There are certain limitations of this study. Most importantly number of participants in the survey is small. This was dictated by logistical considerations as in order to ensure adequate response rate the survey was conducted on sites and correspondence was not relied upon. Additionally there is a reliance on subjective perception of participants as regards to adequacy of training, self-confidence and personal competence. Unfortunately short of resource intensive audit, there are few validated tools for more objective assessment. Nonetheless surgeon's critical self assessment does represent at least an important surrogate marker in gauging confidence and ability.

Conclusion

It is concluded that there are variations in training of general surgery residents as regards to management of paediatric patients between programsme. The guidelines set by CPSP as a regulatory body in this regard are not widely known and the current training paradigm does not give residents sufficient confidence in dealing with surgical problems of paediatric patients.

References

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