ORIGINAL ARTICLE

BASIC KNOWLEDGE OF UROLOGY IN UNDERGRADUATE MEDICAL STUDENTS: A KAP SURVEY IN 6 MEDICAL COLLEGES OF KHYBER PAKHTUNKHWA

Liaqat Ali[1], Azra Ghani[2], Saifullah[2], Mubeena Aslam[2], Nasir Orakzai[1]

[1]Department of Urology, Institute of Kidney Diseases, Hayatabad Medical Complex, Peshawar - Pakistan
[2]Department of Urology, Lady Reading Hospital, Peshawar - Pakistan

ABSTRACT

Objective: To assess the core knowledge of urology of final year medical students of Khyber Pakhtunkhwa where a non urologist is assigned to teach the section of urology in surgical curriculum.

Material and Methods: It is a KAP cross sectional study conducted by department of urology, Institute of Kidney Diseases, Hayatabad Medical Complex and Department of Urology Lady Reading Hospital, Peshawar, Pakistan in 6 medical colleges of KPK from January 2014 to March 2014. Total of 180 final year medical students were enrolled in study (30 each from every college). A pre tested proforma comprising 10 single best MCQ of K1 level was designed from section of urology prescribed in PMDC curriculum from Bailey & Love's Short practice of surgery 26th edition for assessing the knowledge. Each correct answer was scored 10 marks and incorrect as 0. Student with minimum marks of 50 were declared pass according to PMDC regulation. Separate proforma was designed for attitude and practice. The entire questioners were filled upon in presence of volunteer to avoid bias for referring to colleagues or books. Data was then analyzed on SPSS.

Results: Total of 180 students participated in the study. Female medical students were 95 (52.7%) while male students were 85 (47.2%). Regarding total score of knowledge, 66 (37%) students passed the questioner by getting 50 or more marks. Female medical students scored better than male student (female 45 68.1% vs male 21 31.8%). Out of 180 students, 126 (70%) had never seen TURP, 153 (85%) had never seen ESWL, 140 (77%) had never seen PCNL, 155 (86.1%) had never seen cystolitholapaxy, 144 (80%) had never seen TURBT, 160 (90%) had never seen PCN insertion for pyonephrosis. Very unfortunately 108 (60%) had never performed digital rectal examination of prostate while only 36(20%) had performed urethral catheterization. 54 medical students (30%) opted for becoming urologist in future (male 42: female 12). 146 (81%) students recommended a urologist to teach them the section of urology while 34 insisted for general surgeon to teach portion of urology.

Conclusion: The core knowledge of urology of final year students is not satisfactory in colleges where a non urologist is assigned for teaching the portion of urology in surgical curriculum. Their skills are not up to the mark according to PMDC guidelines. Still a good percentage opts for becoming urologist in future and majority recommended a urologist for their teaching.

Key Words: Urology, Undergraduate, Medical Students, MBBS, Curriculum.

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INTRODUCTION

Urology is the specialty of antiquity, even mentioned in Hippocratic Oath that states "I will not cut upon stone even in patients whom disease is manifest, I will refer him to the specialist of its art". This oath means that Hippocrates several centuries ago has recognized, identified and legitimized urology as separate surgical discipline.[1]

There is a question regarding importance of Urology that Why there should be so much emphasis on urological training in undergraduate medical curriculum? The answer is that at least 5-10% of GP visits, 20% of acute hospital surgical referrals and 40% of patients in general surgical OPDs involve patients with urological problems.[2] The portion of Urology constitutes about 40 % of surgical curriculum from Bailey & Love's Short practice of surgery.

Liaqat Ali (Corresponding Author)
Associate Professor of Urology
Institute of Kidney Diseases, Hayatabad Medical Complex, Peshawar - Pakistan
Cell: +92-334-0966665
Email: liaqat99@yahoo.com

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Urology is not consider as separate subject in UK and probably in America, but students are examined for urology knowledge as part of surgical assessment and the students of 4th year and final year also attend urology ward to familiarize with urology[3]. Even then Derbyshire et al in their benchmark study have observed lack of confidence from juniors in managing Urological Conditions[2]. In Pakistan, the governing and regulating body for the medical education, the Pakistan Medical and Dental Council (PM&DC), have recommended the book "Bailey & Love's Short practice of surgery" for teaching purpose and have also set some rules to train the medical students in some basic surgical skills. According to these rules, the final year undergraduates get the opportunity of short time rotations among different surgical units to get exposure of dealing with common specialty-specific cases and learning of basic surgical skills.

However ironically in Pakistan, apart from being not included in MBBS curriculum, students even do not get any sort of exposure to urology in clinical years, they are taught Urology in General surgical wards commonly by General surgeons who definitely lacks in performing basic and advance endourological procedure.

The rationale of our study is based upon critical observation on PMDC regulation 2011, where final year students are supposed to observe and assist Cholecystectomy, Herniorapphy, and Appendectomy etc but not even a single urological procedure is mentioned in curriculum. Very unfortunately, practical urology is confined only to Digital Rectal Examination (DRE) and urethral catheterization.

MATERIAL & METHODS

It is KAP study conducted by department of Urology in Institute of Kidney Diseases (IKD), Peshawar and Department of Urology in Lady Reading Hospital, Peshawar in 6 PM&DC recognized medical colleges (3 Government and 3 Private) of KPK from January 2014 till March 2014.

Following are the names and ownership status of Medical Colleges:

- Khyber Medical College Peshawar (Government)
- Ayub Medical College Abbottabad (Government)
- Saidu Medical College Swat (Government)
- Rehman Medical College Peshawar (Private)
- Kabir Medical College Peshawar (Private)
- Peshawar Medical College Peshawar (Private).

Total of 180 students (30 each from every college) were selected by non probability convenient sampling. We included only final year students who were doing or just completed their clinical surgical rotations.

Questionnaire comprising of 10 single best MCQ of C1 level was designed from urology portion of Bailey & Love's Short practice of Surgery. The Questionnaires were attempted and filled in presence of one of the authors. Correct answer was scored 10 and incorrect as 0. Student with minimum marks of 50 were declared pass according to PM&DC regulation. Separate questionnaire was designed for attitude and practice and were also filled upon by respondents at same time. Data was analyzed on SPSS.

RESULTS

Out of total 180 final year students, 95 were female students and 85 were male students. The overall result in MCQ test is shown in figure1. Regarding the gender and owner ship status of pass 66 students, 21 (31.8 %) were male and 45 (68.1 %) were female (P=0.001), 51 (77%) were the students of Government Medical Colleges while only 15 (22.7 %) students of Private Medical College were able to Pass (P=0.001). Unfortunately only 54 students (30%) have observed some commonly performed endourological procedures. The detail regarding the status of non-observer ship of different common urological procedures during surgical rotation is shown in Table 1.

As discussed earlier, the practical portion of urology has merely been reduced to Digital Rectal Examination and Urethral Catheterization according to PM&DC surgical curriculum 2011. The percentage of practice of even these mentioned procedures is not satisfactory. The detail of practice of these procedure are shown in

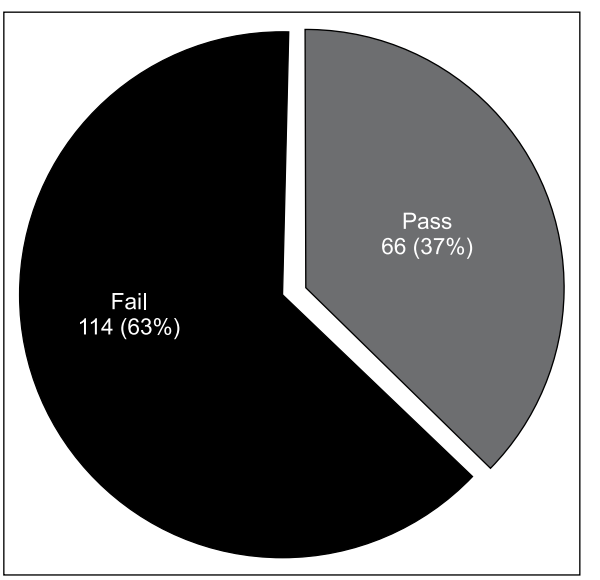

Figure 1: Pie chart showing overall result of final year MCQ test n=180

Table 1: List of basic common urological procedure not seen by final year students

Procedures (Not seen)	No. of students & percentage
Transurethral resection of Prostate (TURP)	126 (70%)
Extracorporeal shockwave lithotripsy (ESWL)	153 (85%)
Percutaneous Nephrolithotomy (PCNL)	140 (77%)
Cystoscopy & Litholapaxy	155 (86%)
Cystoscopy and Ureteral Stenting (DJS)	126 (70%)
Transurethral resection of Bladder Tumor (TURBT)	144 (80%)
Percutaneous Nephrostomy (PCN) insertion	160 (90%)

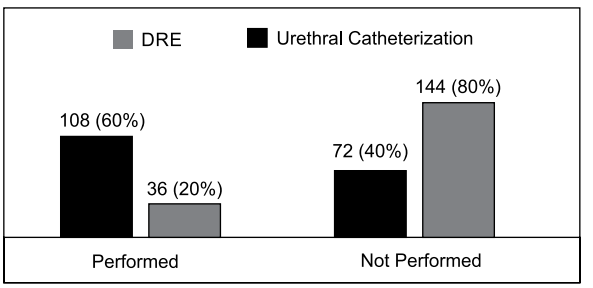

Figure 2: Graph showing skills of undergraduate medical students

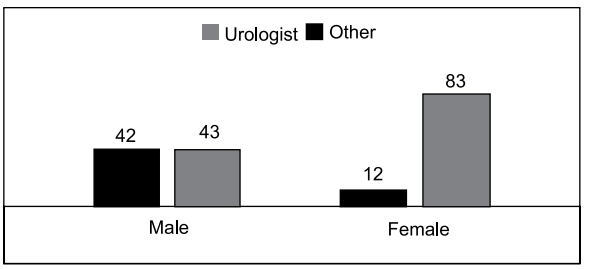

Figure 3: Aptitude of medical students for becoming urologist in future

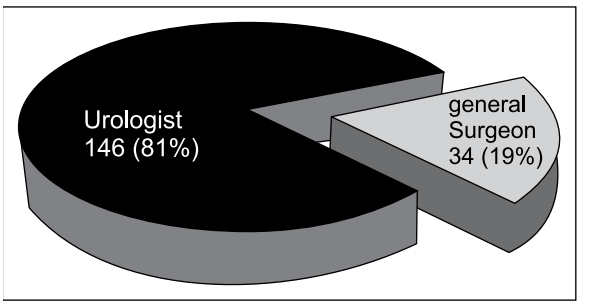

Figure 4: Graph showing choice of clinical teacher for portion of urology (n=180)

figure 2. Regarding their aptitude for becoming future urologist, only 54 students (30%) opted to become urologist in future. The detail of gender based aptitude for selecting urology in postgraduate fellowship is shown in Figure 3. Regarding a very pertinent question that who should teach the portion of urology in undergraduate medical curriculum, the answer is shown in figure 4.

DISCUSSION

Urology is a separate surgical discipline and its importance in undergraduate medical curriculum should not be under estimated at any cost. There are some serious flaws in existing PM&DC rules that are creating a serious gap of knowledge transfer between rapidly expanding field of urology and under graduate medical students. This gap will have negative impact on patients care in already exhausted health system of Pakistan.

The strength of our study is the fact that it is a pioneer KAP analysis of larger sample size equally involving Public and Private Medical Colleges of Khyber Pakhtunkhwa; Pakistan. Moreover to alleviate the analyst bias for this KAP Analysis, we have included the authors from disciplines of Urology, Medical education, General Surgery. The limitation of the study is basically the weakness of any KAP analysis as it is difficult to measure the attitude, the chances of courtesy bias remains a matter of concern in any KAP analysis.

The present study was carried out with an aim to assess and analyze the knowledge, aptitude and perception (KAP) about urology among the final year medical undergraduates in Pakistan. The strengths of this study are the inclusion of a good sized sample both Public and Private Medical Colleges of Khyber Pakhtunkhwa, Pakistan. Moreover, investigators from diverse disciplines including urology, general surgery, general medicine and bio-medical education jointly carried out this study to alleviate the analyst bias for this KAP analysis. However in our study, like any other KAP analysis, the concern of courtesy bias presents a major limitation because of the difficulty to objectively and reliably measure the attitude.

The results of our study show an overall insufficient level of knowledge in urology acquired by the final year medical undergraduates. The minimum score of 50 that represents satisfactory level of knowledge was obtained by only 37% students, out of which 77% were from the Government Medical Colleges included in the study. This shows that the private sector medical colleges need far more practical efforts to improve the competency

of their students in the field of urology. The basic level of urology can be improved by Interactive lectures, mandatory rotations in urology, patients' bed-side teaching, small group discussions, and E-learning[6,7].

Regarding the exposure of the students to different urological surgical procedure during their rotations, most of the students reported to have an insufficient level of exposure. Only 30% of the students enrolled in this study were confident to have observed some of the commonly performed endourological procedures. From 70 to 90 % of the students had not even observed the different routine surgical procedures of the urology clinics. As mentioned earlier that according to the surgical curriculum recommended in 2011 by PM&DC, the practical portion of urology has merely been reduced to Digital Rectal Examination and Urethral Catheterization. The percentage of students having practice of even these procedures is only 60% and 20% respectively, which is very much unsatisfactory.

The choice of urology as field of specialization for postgraduate fellowship is going through a continued declining phase. Overall only 30% students preferred urology as their career in our study. Gender differences were very noticeable in terms of specialty choice. Male participants were observed to be equally comfortable in selecting urology as any other field of surgery, whereas the majority of females, accounting for above 87%, did not preferred urology. This trend of non-preference of urology has also been observed in Europe, America, Canada and Saudi Arabia[1,6,8,9,10,11]. Similar trend was noticed in a study carried out in Saudi Arabia where the investigators pointed out multiple reasons behind non-selection of urology by undergraduates specially the female students[1,4,5]. The local traditions, gender and social issues have been suggested as the major reason for this trend[1]. Other reasons proposed by different investigators include insufficient undergraduate exposure, preference for specialties with controllable lifestyles, fulfilling life with job security and scarcity of role models[1,2,8,9].

Aside from personal preferences of selection of specialty choice, most of the students (81%) acknowledged the importance of urology as an important specialty that must be taught at undergraduate level by a qualified urologist instead of a general surgeon or any other non-specialist of urology. This is especially important in the current medical setup in Pakistan where the frequency of common urological problems is increasing and in most cases the patients get initial treatment by the general physicians. Therefore to properly address these cases, the future general or primary care physicians must be well taught and well equipped with the basic urological knowledge and procedures[12,13,14,15]. Binsaleh and co-investigators have also presented the similar ideas in their study conducted at the largest medical college of Saudi Arabia[1]. The duration of the undergraduate rotation in urology recommended by some previous studies is not less than 2-3 weeks[16,17]. For the effective delivery of these skills to the medical undergraduate students, strong mentorship by an expert urologist should be provided during a mandatory rotation in urology.

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AUTHOR'S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under:

Ali L: Main idea.
Ghani A: Data collection
Khan S: Manuscript writing.
Aslam M: Bibliography.
Orakzai N: Overall supervision.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.