



This is a repository copy of *Cross-sectional survey research investigating how medical students use clinical photographs to support their learning*.

White Rose Research Online URL for this paper:

<http://eprints.whiterose.ac.uk/145572/>

Version: Accepted Version

Article:

Dakin, C. and Coates, E. (2019) Cross-sectional survey research investigating how medical students use clinical photographs to support their learning. *Journal of Visual Communication in Medicine*, 42 (1). pp. 15-25. ISSN 1745-3054

<https://doi.org/10.1080/17453054.2018.1548267>

This is an Accepted Manuscript of an article published by Taylor & Francis in *Journal of Visual Communication in Medicine* on 05/04/2019, available online:
<http://www.tandfonline.com/10.1080/17453054.2018.1548267>.

Reuse

Items deposited in White Rose Research Online are protected by copyright, with all rights reserved unless indicated otherwise. They may be downloaded and/or printed for private study, or other acts as permitted by national copyright laws. The publisher or other rights holders may allow further reproduction and re-use of the full text version. This is indicated by the licence information on the White Rose Research Online record for the item.

Takedown

If you consider content in White Rose Research Online to be in breach of UK law, please notify us by emailing eprints@whiterose.ac.uk including the URL of the record and the reason for the withdrawal request.

Cross-sectional survey research investigating how medical students use clinical photographs to support their learning.

Carly Dakin

University Hospitals Leicester.

Dr Elizabeth Coates

School of Health and Related Research, The University of Sheffield.

Correspondence to: Carly.dakin@nhs.net

Abstract

This study explored students' use of clinical photographs within seven medical schools in England. The design used was cross-sectional survey research. The data collection method was a self-completion online survey. A total of 283 students participated in the study. The proportion of students using clinical photographs was 87%, p= 0.217. The medical subject discipline in which clinical photographs were considered by students as most useful were dermatology (71%). The proportion for those 'Very' or 'Quite' likely to access an image library made available through their medical school was 92%. The main barrier to using existing photographic resources was awareness.

Keywords

Clinical photography, Medical Education, Health Communications, Service Development, Dermatology, Image Library

Introduction

Clinical photography as we recognise it now, emerged in the latter part of the 19th Century (McFall, 1997). Early photographs were initially the work of portrait photographers, clinicians and later undertaken by technicians in pathology and radiography departments.

Peter Hansell, photographer, qualified physician and founder of the clinical photography service at Westminster Hospital Medical School and later at the Institute of Ophthalmology was a key figure in promoting the use of clinical photographs in medical

education. His own experience was limited to the delivery of education through '*sheer unadorned oratory*' (McFall, 2000). Hansell made the clear distinction between clinical photography for the purpose of documenting a patient's clinical condition and clinical photography for the education of medical students and healthcare professionals. Following much collaboration amongst photographic groups such as *Association of Scientific Photographers* (APS), *The Royal Photographic Society* (RPS) and *The Institute of British Photographers* (IBP), the first register of clinical photographers was established in 1948 (McFall, 2000). Further professional bodies emerged such as *The Institute of Medical And Biological Illustration* (IMBI) and the *Institute of Medical Illustrators* (IMI), Scotland. Qualification and career structures were also established which would lead us to the clinical photography profession which exists today; with practitioners registered under the Health Professionals Council.

Despite clinical photography being an established profession, it is still common for other healthcare professionals to undertake photography of patients. The role of the clinical photography department in this now digital age is to not only undertake professional-level photography; clinical photography departments must now also manage the numerous images generated each day within a modern NHS, functioning within a society where the practice of photography is accessible to the majority. Many of the clinical photography departments house large clinical image databases which integrate into the patient record. Many of these databases will only date as far back as the early 21st century when the first departments adopted digital photography, their original film-based images now archived or even digitised and stored electronically.

Clinical photography and the way it is used within education has evolved along with technology; taking it from the lantern slide to digital mobile applications. Clinical photography departments began to adopt digital photography into standard practice in the late 1990's (Nayler et al, 2001) having to master its use in the medical field and produce methods of managing the image files electronically.

Despite the prominence of clinical photography, there is limited recent research to facilitate our understanding of its role in medical education. Some previous examples of research include McArthur (1982) and Sutcliffe (1990). McArthur (1982) reviewed the resources available to educators working within medicine at that time with a view to their application in the developing world. Sutcliffe (1990) was the first known to publish a review of medical slide or imaging libraries across the UK. He surveyed both medical illustration departments and university medical libraries but the sample population is unclear. His research, undertaken in England and Wales, aimed to assess the content, management and use of the collections via a postal questionnaire and interviews.

In 1997 collaboration between *St George's Hospital London*, *The University of Bristol*, *St Bartholomew's* and the *Royal London Hospital* and what was then the *Wellcome Centre for*

Medical Education resulted in a group called Medical Images Digitised Reference Information Bank (MIDRIB). This group, funded by JISC (formerly the *Joint Information Systems Committee*) published a document providing advice and guidance on setting up a central digitised medical image library (MIDRIB, 1998). Its aim was to provide more effective medical teaching and learning by creating a comprehensive national image resource that could be accessed by UK universities and teaching hospitals through registration (Anagnostelis and Welsh, 1997). The document provides a framework for anyone considering the setting up, management and maintenance of a medical image library.

More recently, Amri et al (2012) briefly discusses in a letter to the journal *Medical Teacher* a randomised controlled trial carried out with two groups of medical students. Group A (control arm) received traditional teaching methods whereas group B (intervention arm) received the intervention which was in this case dermatology teaching sessions using digital clinical photographs. This study however appears to be unpublished and there is little information available about when and where it took place in this short letter to the editor, as is highlighted in a response by Cohen (2012). Krohn et al (2014) discuss the successful use of printed photographs in an informal teaching exercise in 4th Year Medical students in order to enhance the teaching of ophthalmoscopy.

Another significant shift has been seen with the emergence of informed consent to photography, 1984 saw the introduction of patient consent forms into the clinical photography department at Addenbrookes Hospital in Cambridge. They would enable the written recording of a patient's permission for photography to take place which would also outline any agreed subsequent use of the images (Johns, 2002) such as in medical education.

To date Wellcome Trust holds the largest formal collection of clinical images in the UK possessing in the region of 32,000 digitised and born digital clinical photographs (Strategic Policy Unit, Wellcome Trust, 2011). Access to and the contents of the clinical image collection at Wellcome is currently under review following subsequent reviews in 2002 as the resource was released online and also in 2011 as part of a wider study of Wellcome resources. As a large UK based specialist image library Wellcome Collection was used as a benchmark for the study. Other resources are available however and a list of image libraries containing clinical images can be seen in Table 1.

In addition Boulos et al (2006) discusses the possibilities of such resources as Google Images and Wikimedia referring to the uploading of clinical photographs to blogs. It mentions two US blog sites *Clinicalcases.org* a resource of general clinical cases and *DIG@UTMB* which is Dermatology focused.

A 2018 search through the '*iTunes* app store' titled 'clinical photos' reveals 31 results (compared to 25 in 2014), they include:

MedShr:Discuss Clinical Cases

Papyrus:Secure clinical photo-share

NEJM This Week

JN challenge from JAMA

PicSafe

Share Smart

ClinPix

DoPS

In addition to these resources, medical schools can apply for access to the image resource of the *Medical Schools Council Assessment Alliance (MSCAA)*. Following correspondence with the *Medical Schools Council* (MSC) administration team, it was established that four schools (in March 2014) accessed the *MSCAA*. This resource provides clinical photographs for use in exams; and is a free resource not publicly available.

The purpose of this research was to gain a contemporary view of whether clinical photographs are still widely used and demanded by clinical academic communities considering emerging technologies and new methods of healthcare and educational delivery. In addition, the study explored the idea of the clinical image library as a potential method of image access, the corresponding author at the time was employed as Clinical Collections Coordinator with Wellcome Trust however the research was independent of that role and undertaken as part of an MSc in Clinical Research at the University of Sheffield.

Research Methods

The research aims were to “*describe the number of people involved in certain behaviours or that hold specific beliefs*” i.e., how many medical students use clinical photographs, it was felt quantitative methods are better suited to achieving this (Nardi, 2014). A cross-sectional survey was used as it is an efficient and useful design when investigating a large population over a short period of time (Nardi 2014). As the aim was to complete this study as part of a Masters dissertation project, this was an appropriate data collection method. Survey research can take many forms, however due to the known educational level of the population of interest the low-cost self-completion web-based survey was deemed appropriate. It provides an enhanced level of efficiency, allows anonymity and is convenient for participants. To generate a sample for the survey, a multi-stage approach was used, this method is not uncommon within research taking place in a university or school (Nardi, 2014) as it allows for a more manageable sample size to be taken from a large population within

low-budget time sensitive studies. The schools were clustered into 'strata' using geographical regions set out by the *Medical Schools Council* (MSC) (Figure 1), seven of these regions being within England. A number of Medical Schools were located within these seven regions in England. One school from each of the seven regions was taken forward to the final population sample through purposive selection (Figure 2). The third and final stage was saturation sampling within the seven schools, the aim was to send out a link to the survey via a gatekeeper to the entire student population within each of the selected schools. Once the survey was sent out it was the choice of the individual whether or not they would participate and complete the survey. Sampling the medical school student population in this way enabled a school from each region to be represented.

Confirmit web-survey delivery software was used to produce the online questionnaire. This software is preferred over the other options as it is considered to provide a more sophisticated level of security. Using software such as *Confirmit* allowed for relatively easy programming and pre-coding of the questions so that students and tutors would only see those questions specifically intended for them, therefore minimising time spent answering the survey and increasing the potential of completion. Developing the questions was a collaborative process, once the first draft was produced this was reviewed by the authors. Initial questions were included to determine the level of study i.e., pre-clinical/clinical this was deemed important. Survey research undertaken by Heeyoung et al (2014) to investigate the learning technology needs of a cohort of American Medical Students found that there was a distinct difference in needs between pre-clinical and clinical students that was attributed to the different '*curriculum environments and activities*' of the students.

To assess the extent of social phenomena and to quantify opinion and experience, categorical data is useful and was utilised throughout the survey. Binary categories are easier to analyse and provide more opportunity in breadth of analysis whereas providing nominal categories of two or more options or the possibility of rating the categories through an ordinal presentation allows for choice. It may therefore provide greater detail and a little more context. Combinations of these were used to achieve an interesting amount of variability to maintain the interest of the participant. The survey questions can be seen in Figure 3.

The survey was opened for a period of four weeks with a reminder email being sent at the start of week two. As an incentive, students were offered the chance to take part in a prize draw to win a medical themed poster-print.

An SPSS-ready file was extracted from the survey response data (SPSS is a statistics software package used for interactive, or batched, statistical analysis). The outcome variables were categorical and either nominal or binary and therefore certain methods of analysis were more appropriate. Frequency charts, contingency tables and Chi-squared tests in some cases (where the independence of outcome variables was to be tested) were utilised.

Results

The survey achieved a sample size of 283 medical students and tutors from the seven medical schools. Table 2 shows the response of each of the seven medical schools surveyed. The response rate is calculated as 3%.

Data relating to survey population was significantly less for tutors than for students, the proportion of medical school tutors in the final sample was n=34 (12%). No students at medical school 1 responded. Of the 283 respondents 249 were students. The remaining data is reported in this paper without that generated by medical school 1 and those within the 'medical tutor' role so as not to skew the data.

The sample proportion of students using clinical photographs was $87\% \pm 0.04$ (CL 95%). However, using a Chi-squared test, it was found that use of clinical photographs specifically in teaching and learning was not dependant on role (so whether the student was at the clinical or pre-clinical stage) $p = 0.217$.

Where images are used

The most common use of photographs was for reference purposes $89\% \pm 0.04$ followed by teaching material $59\% \pm 0.07$, work to be assessed $27\% \pm 0.06$ and then publication $12\% \pm 0.04$. Again, this was mostly independent of role, however in the category *work to be assessed*, use was dependent on role with clinical students 2.6 times less likely to use them for this purpose, which could be as a result of changes in assessment criteria by year of study.

$36\% (\pm 0.06)$ of students found it 'very easy' or 'easy' to source appropriate photographs compared to $33\% \pm 0.06$ who found it either 'very difficult' or 'difficult'. Using a Chi-squared test it would appear that ease of finding clinical photographs is dependent on stage of training role $p=0.014$. This is further illustrated in Figure 4.

Where images are sourced

The internet was a dominant source of images, in particular using internet search engines ($96\% \pm 0.03$) (CL 95%). Despite the wide range of online resources, text books were still used by a large proportion of students $59\% \pm 0.06$ (CL 95%). Few students used clinical image libraries $14\% \pm 0.05$ (CL 95%) or NHS medical illustration departments to access images $6\% \pm 0.03$ (CL 95%) (Figure 5).

Figure 6 illustrates what students chose as a 'very important' factor when considering clinical photographs for use. The highest sample proportion is for the category 'Cost' n=158

$p=0.63\pm0.06$ (CL 95%). The lowest is for 'Image file size appropriate for use' n=42
 $p=0.17\pm0.05$.

Where images are most useful

Students were asked to choose within which medical subjects clinical photographs were most useful. 2/53 subjects had a sample proportion >0.50 these were;

Dermatology: 0.71 ± 0.06 (CL 95%) and Infectious diseases: 0.51 ± 0.07 (CL 95%). Both of these disciplines have a greater likelihood of patients having a visible disease presentation.

Clinical Image Libraries: Awareness and potential

The final questions explored the current availability of clinical photographs through medical school libraries (via a clinical image library) and responses indicate that although many students used the library resources, very few were aware of any clinical image library resources available through this route $84\% \pm 0.02$ (CL 95%). Popularity of use of medical school libraries was dependant on institute and so this may indicate certain schools having fewer resources or having less emphasis on resources delivered using this method. Many students were not aware of the *Wellcome Clinical Image Collection* specifically $92\% \pm 0.03$ (CL 95%). It is important to note an equally high proportion of the students perceived themselves as 'Very' or 'Quite' likely to access a clinical image library made available through their medical school library $92\% \pm 0.03$ (CL 95%).

Discussion

The research has provided some interesting data into the use of clinical photographs within medical education, an area in which research is not widely published.

Notably clinical photographs play a significant role in medical students' learning particularly when searching for images that illustrate clinical conditions to view on screen (for reference purposes) and in studying dermatology and infectious disease. This study highlights that instead of accessing images through an NHS medical illustration department or clinical image collection, students predominantly go to internet search engines where they must navigate copyright and consent issues, potentially unreliable, poor quality and unethically sourced images. This practice is most likely a result of low awareness among students of the resources available to them via Medical illustration departments and clinical image libraries.

When students were made aware of the potential of accessing images through a clinical image library, the perceived use of such a resource if it was well promoted and easy to access was high. This is encouraging to those already providing medical photography and illustration services and also to anyone seeking to create or develop a collection of clinical images into a more accessible educational resource in the future.

To understand what the study adds to previous data I would refer again to the work of Sutcliffe (1990). The extent of the use of resources available at the time of Sutcliffe's study was not recorded clearly and so it is difficult to make direct comparisons as to whether lack of awareness and use has changed over time. Comments are made however that would suggest a similar lack of awareness and use. It is stated "*Awareness of department of medical illustration slide collections by the hospital staff was low in the hospitals visited and there appeared to be no active effort to cultivate it*" however this was at a time where slides had to be accessed from a specific location and not conveniently available electronically, the event of digital technology should have revolutionised this making access much easier and offering such a resource a more viable option.

The findings from this study suggest that it could be an opportune time for Medical Illustration departments and those with Clinical Image collections to invest in and reach out to medical education providers and subscribers enabling appropriate access levels to their valuable electronic resource in some way. As informed consent procedures allow patients to specify how they wish their recordings to be made available, it offers the opportunity to reduce ambiguity around issues of image use.

This research has also uncovered the potential of involving others in choosing what to present within a medical image library and has highlighted the potential priority study areas of Dermatology and Infectious disease, in Sutcliffe (1990) it was highlighted that collaborative working to achieve this insight wasn't common practice at the time of his research.

In terms of studying the population of medical students, comparatively other studies have gained better response rates, (Heeyoung, 2014). Researchers concentrated their sample within a particular class or year and this approach could be used if the study were to be repeated. A mutually convenient time could be arranged and the survey completed in the classroom. Heeyoung (2014) also highlighted significant differences between the learning needs of pre-clinical and clinical students, in comparison our study found that the pre-clinical group who have less exposure to real patient encounters could benefit more from guidance in sourcing clinical photographs to support their learning

A sample size of 283 can be considered acceptable. Based on its size in relation to the population and the non-random method by which it was generated, we cannot with 100% confidence relate the findings to the wider population. With a response rate of 3% some statisticians may discount the results altogether (Rumsey, 2011). However closer examination of the demographics indicates a good representation of the wider population in relation to Gender and Ethnicity (Tables 3 & 4).

The general low response rate could be explained by the timing of the survey however this was dictated by the fact that the survey was part of an MSc dissertation and so had to be delivered at this time. At the end of the academic year survey fatigue is most probably at its highest and this in combination with holiday and exam times could have resulted in potential participants having less time and interest in completing a survey. This presents the opportunity for sampling bias to become a factor within the data.

Whilst this study suggests how useful clinical photographs are, the next challenge is to collaborate with those who see their value and support their production. It would be important to investigate potential methods to share existing and future collections safely and legally with an appropriate audience using technology that is innovative, accessible, and adaptable.

Ethical consideration

The research was approved by The University of Sheffield ScHARR ethics review board. The ethics review board was presented with a research proposal and documents such as participant information, consent forms and planned correspondence for each stage of the research.

References

Anagnostelis A and Welsh, B. 1997. *MIDRIB: Beyond Clip Art for Medicine*. [Online] Available at: <http://www.ariadne.ac.uk/issue9/midrib-launch> [Accessed 06 June 2014].

Amri M, et al. 2012. Digital photographs in clinical teaching of dermatology: What is their proper place? *Medical Teacher* 34(6):510–511.

Boulos et al. 2006. Wikis, blogs and podcasts: a new generation of Web-based tools for virtual collaborative clinical practice and education. *BMC Medical Education*. 6:41. doi:10.1186/1472-6920-

Cohen S. (2012) Let's be clear on the proper place of photographs in teaching dermatology, *Medical Teacher*, 34:12, 1088-1088, DOI: 10.3109/0142159X.2012.716565

Heeyoung H et al. 2014. Medical students' online learning technology needs. *The Clinical Teacher*. 11. 15-19.

Johns, M. K., 2002. Informed consent for clinical photography. *Journal of Audiovisual Media in Medicine*, 25(2), pp. 59-63.

Krohn, J et al. 2014. Matching fundus photographs of classmates. An informal competition to promote learning and practice of direct ophthalmoscopy among medical students. *The Journal of Visual Communication in Medicine*.37.13-18.

- Nayler J, et al. 2001. Managing Digital Clinical Photographs. *Journal of Audiovisual Media in Medicine*, 24(4), pp. 166-171.
- McArthur A. 1982. Conventional and high-technology teaching methods for educating health professionals in developing nations. *Journal of Audiovisual Media in Medicine*. 21-26.
- McFall, K. 1997. A notable anniversary in the history of Medical Illustration. *Journal of Audiovisual Media in Medicine*, 20(1), pp. 5-10.
- McFall, K. 2000. *A Critical Account of the History of Medical photography in the United Kingdom*. Institute of Medical Illustrators.
- MIDRIB, 1998. *MIDRIB Building a Digitised Medical Image Library*. [Online] Available at: <http://www.ukoln.ac.uk/services/elib/projects/midrib/final-report/intro.html> [Accessed 06 June 2014].
- Nardi P. 2014. *Doing Survey Research*. 3rd ed. London: Paradigm.
- Rumsey D. 2011. *Statistics for Dummies*. New Jersey. Wiley.
- Strategic Policy Unit, Wellcome Trust. 2011. *Wellcome Trust Clinical Images Collection Review*, London: Wellcome Trust.
- Sutcliffe, G. S. 1990. Management of slides by departments of medical illustration and medical libraries in university teaching hospitals. *Journal of Audiovisual Media in Medicine*, Volume 13.

Name	Method of delivery	Cost	Access restrictions	Summary content
Wellcome Images	Online Library - wellcomeimages.org (BAPLA accredited)	Royalty free and rights-managed images available no cost to view.	No public Access	Clinical photographs, imaging and illustration
			Registered users only	
Phototake	Online Library http://www.phototakeusa.com/ (BAPLA accredited)	Royalty free and rights-managed images available no cost to view.	Public Access	Clinical photographs, imaging and illustration
			Must register to purchase	
Science Photo Library	Online Library http://www.sciencephoto.com/ (BAPLA accredited)	Royalty free and rights-managed images available no cost to view.	Public Access	Clinical photographs, imaging and illustration
			Must register to purchase	other healthcare and science imaging
Mediscan	Online Library http://www.mediscan.co.uk/	Royalty free and rights-managed images available no cost to view.	Public Access	Clinical photographs, imaging and illustration
			Must register to purchase	
NHS Photo Library	Online Library- http://www.photolibrary.nhs.uk/	Rights-managed images available no cost to view.	Only available to NHS or Public Health England employees.	Unknown/access restricted
			Sponsored access possible.	
Custom Medical Stock Photo	Online Library- http://www.cmssp.com/	Royalty free and rights-managed images available no cost to view.	Public Access	Custom Medical Stock Photo is a Stock Image Solutions Provider for Healthcare & Medical Stock Photos
			Must register to purchase	
Medicimage	Online Library- http://www.medicimage.co.uk/	Royalty free and rights-managed images available no cost to view.	Public Access to some images	Stock Clinical Photography Provider
			Must make contact to buy	
Medical Illustration Sourcebook	Online Agency- http://www.medillsb.com/	Rights-Managed Images available	Public Access Must make contact to buy	Provides contacts and examples of work
Health on the Net (HON)	Online - http://www.hon.ch/HONmedia/	Rights-Managed Images available	Public Access	Clinical photographs, imaging and illustration
			Must register to purchase	
Netter Images	Online - http://www.netterimages.com/	Rights-Managed Images available	Public Access	Variety of Medical illustrations
SMART – Scientific and Medical Art	Online - http://ebsco.smartimaginebase.com/	Rights-Managed Images available	Public Access	Variety of Medical illustrations
			Must register to purchase	

Table 1: Image libraries containing clinical photographs

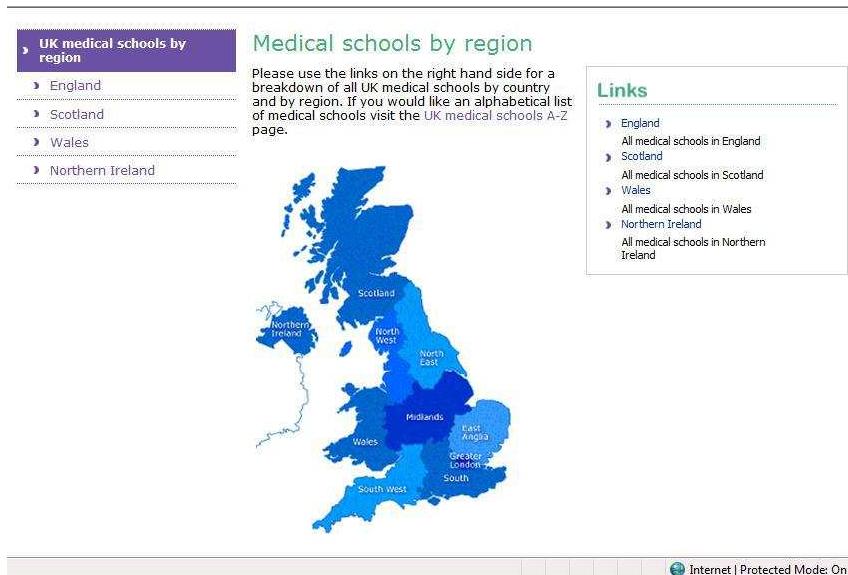


Figure 1: Map of the UK divided by geographical region

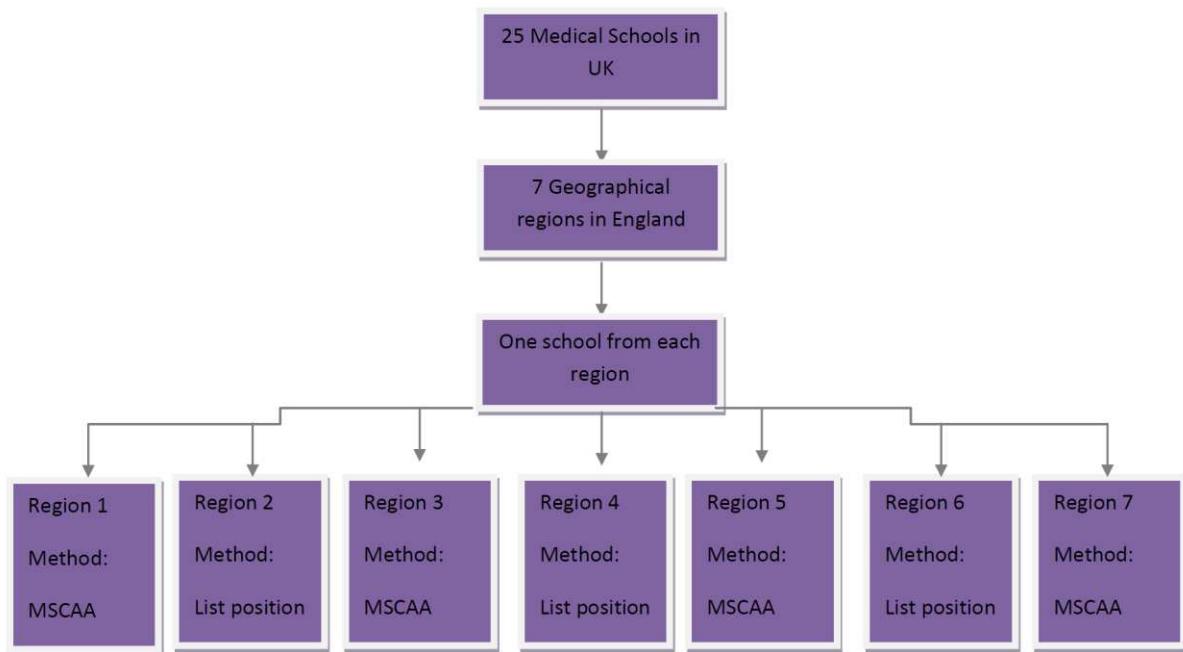


Figure 2. The sample selection process

School	Frequency	Percent
Medical School 1	1	0.4
Medical School 2	41	14.5
Medical School 3	44	15.5
Medical School 4	16	5.7
Medical School 5	61	21.6
Medical School 6	73	25.8
Medical School 7	47	16.5
Total	283	100

Table 2: Response by Medical School

<p>Survey Questions</p> <p>1. Please select the role that best describes you: Pre-Clinical Medical Student Clinical Medical Student Medical School Tutor</p> <p>2. MEDICAL STUDENTS ONLY If you are a medical student are you studying on the Graduate Entry Pathway? Y/N</p> <p>3. MEDICAL STUDENTS ONLY Please specify your year of study: Student Year 1 Year 2 Year 3 Year 4 Year 5 Year 6 Other</p> <p>4. TUTORS ONLY Please specify your teaching specialties: (please select from within drop down list taken from GMC data) Anaesthetics, General Practice, Medicine: Allergy, Audiological Medicine, Acute/Emergency, Clinical Genetics, Clinical Neurophysiology, Cardiology, Clinical Immunology, Clinical Pharmacology, Endocrinology, Endocrinology and Internal Medicine, Gastroenterology, General Internal Medicine, Geriatric Medicine, Infectious Disease, Internal Medicine, Medical Oncology, Medical Ophthalmology, Neurology, Occupational Medicine, Palliative Medicine, Pharmaceutical medicine, Rehabilitation medicine, Respiratory, Rheumatology, Sport and Exercise Medicine, Haematology, Histopathology, Microbiology and Virology, Psychiatry, Child and adolescent psychiatry, Forensic Psychiatry, General Adult Psychiatry, Old Age Psychiatry, Psychiatry of Learning Disability, Psychiatry, Rehabilitation, Clinical Psychology, Child Psychology, Clinical Psychologist, Psychotherapy, Radiology, Clinical radiology, Clinical Oncology, Cardiothoracic surgery, General Surgery, Neurosurgery, Oral and Maxillofacial Surgery, Orthopaedic Surgery, Paediatric Surgery, Plastic Surgery, Trauma and Orthopaedic Surgery, Urology, Other (free text)</p> <p>5. At which Medical School are you registered as a student/tutor? East Anglia - Cambridge (University of), School of Clinical Medicine, Norwich Medical School, University of East Anglia, Greater London - Barts and The London School of Medical and Dentistry, Queen Mary, University of London, King's College London School of Medicine (at Guy's King's College and St Thomas' Hospitals), College of Medical and Dental Sciences, London, Middlesex University, School of Health and Life Sciences, Postgraduate Medical School St George's, University of London, University College London, University College Medical School, Miflands - Birmingham (University of), School of Medicine Keele, University of Keele, University of Liverpool, University of London, University of Warwick, Warwick University, Warwick Medical School, Nottingham (The University of), Faculty of Medicine and Health Sciences North East - Hull York Medical School, Leeds (University of), School of Medicine Newcastle University, Newcastle upon Tyne (The University of), Faculty of Health and Life Sciences Manchester (University of), Faculty of Medical and Human Sciences, South - Brighton and Sussex Medical School (University of), Medical School, Nottingham (University of), School of Medicine, South West - Bristol (University of), Faculty of Medicine Exeter (University of), Medical School Plymouth, University Peninsula Schools of Medicine and Dentistry</p>	<p><i>About your teaching/learning</i></p> <p>6. Do you currently use Clinical Photographs in your learning/teaching? Y/N</p> <p>7. Do you use clinical photographs as reference material (on screen viewing)? Y/N</p> <p>8. Do you use clinical photographs to download and use for inclusion? In: Teaching materials Y/N Work to be assessed Publication Y/N</p> <p>9. How easy is it to find appropriate clinical photographs you can use for teaching/learning purposes? Use a 5-point scale - very easy/easy/neither difficult/very difficult: From which subject areas, if any, do you find clinical photographs most useful to your teaching or learning? Anesthesiology, General Practice, Medicine: Allergy, Audiological Medicine, Acute/Emergency, Clinical Genetics, Clinical Neurophysiology, Cardiology, Clinical Immunology, Clinical Pharmacology, Endocrinology, Endocrinology and Internal Medicine, Gastroenterology, General Internal Medicine, Geriatric Medicine, Infectious Disease, Internal Medicine, Medical Oncology, Medical Ophthalmology, Neurology, Occupational Medicine, Palliative Medicine, Pharmaceutical medicine, Rehabilitation medicine, Respiratory, Rheumatology, Sport and Exercise Medicine, Haematology, Histopathology, Microbiology and Virology, Psychiatry, Child and adolescent psychiatry, Forensic Psychiatry, General Adult Psychiatry, Old Age Psychiatry, Psychiatry of Learning Disability, Psychiatry, Rehabilitation, Clinical Psychology, Child Psychology, Clinical Psychologist, Psychotherapy, Radiology, Clinical radiology, Clinical Oncology, Cardiothoracic surgery, General Surgery, Neurosurgery, Oral and Maxillofacial Surgery, Orthopaedic Surgery, Paediatric Surgery, Plastic Surgery, Trauma and Orthopaedic Surgery, Urology, Other (free text)</p> <p>11. If you do use Clinical Photographs, where do you get them from? Through a search engine - "image" search Through an independent picture library website Through an NHS Medical Illustration Department Image database Copy from a textbook Link to a website A range of sources Other (free text)</p> <p>12. Please tell us how important the following things are when selecting a clinical photograph for use? Use 5 point scale here: Very important - not important <ul style="list-style-type: none"> • If the diagnosis and description is from a valid source • If the image file size is adequate for my needs • If the image is clear enough • If the subject has given consent for use • Who owns the copyright to use of the image </p>	<p><i>Educational resources</i></p> <p>Most universities have an electronic database available through the library website. This database is a central repository where it is possible to gain access to search numerous sources such as academic journals.</p> <p>13. Do you access the electronic databases available through your medical school library? Y/N</p> <p>14. Are you aware of any picture libraries offering clinical photographs that are available to you? Y/N</p> <p>15. If a photography collection was made available to you through your university library would you access it? Y/N</p> <p>16. Awareness</p> <p>17. Are you aware of the Wellcome Trust Library and its Clinical Images Collection? Y/N</p> <p>18. Have you registered to and accessed the Wellcome Trust Clinical Image Collection? Registered Accessed Both Neither Other (free text)</p> <p>19. Demographics</p> <p>19. What is your gender? Male Female</p> <p>20. What is your ethnic group?</p> <p>A. White English / Welsh / Scottish / Northern Irish / British Irish Gypsy or Irish Traveller Any other White background, (free text) B. Mixed / multiple ethnic groups White and Black Caribbean White and Black African White and Asian Any other Mixed / multiple ethnic background, (free text) C. Asian / Asian British Indian Pakistani Bangladeshi Chinese Any other Asian background, (free text) D. Black / African / Caribbean / Black British African Caribbean Any other Black / African / Caribbean background, (free text) E. Other ethnic group And Any other ethnic group, (free text)</p> <p>21. What is your age? 18-29 30-49 50-64 65+</p> <p>22. Following this survey we would like to conduct further research, if you would be happy to be contacted with more information on how to take part please provide an email address:</p>
--	---	--

Figure 3: Survey questions

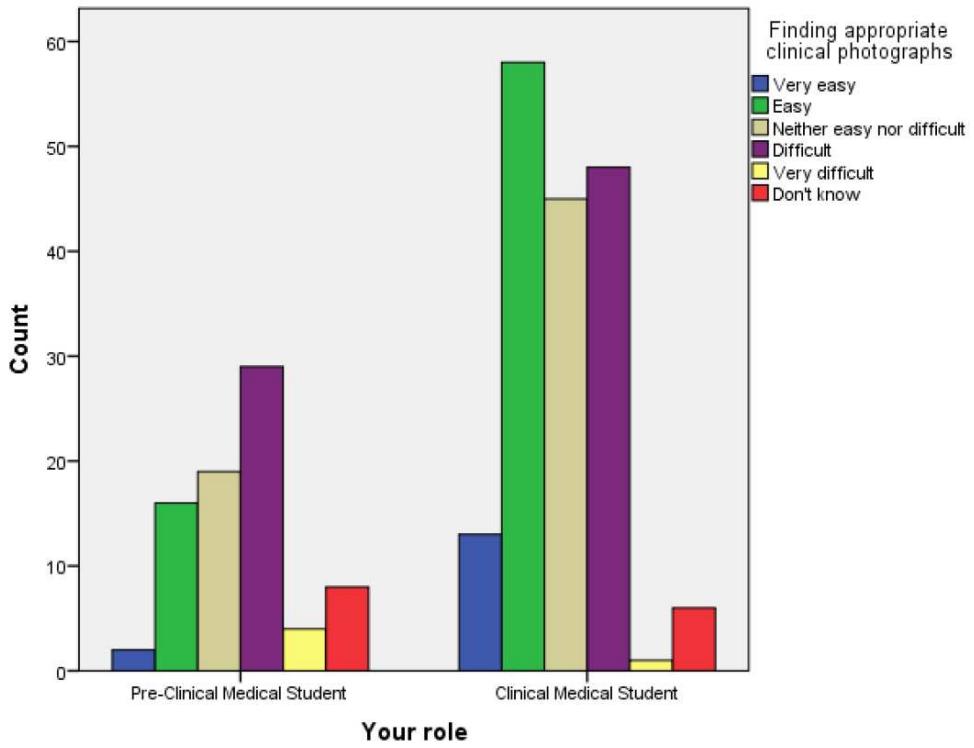


Figure 4. Frequency bar chart to illustrate ease of finding clinical photographs by role.

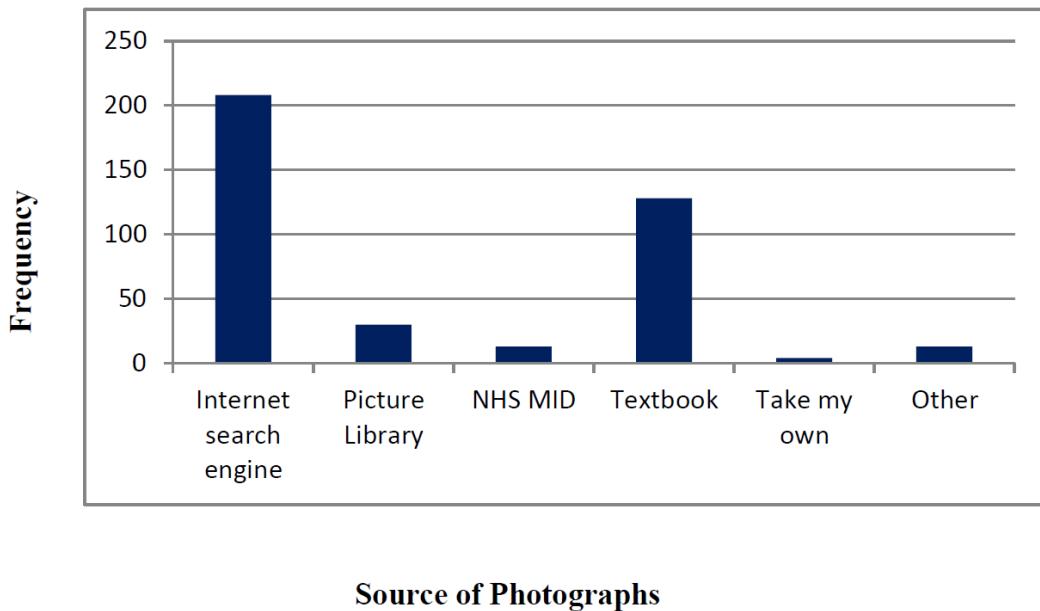
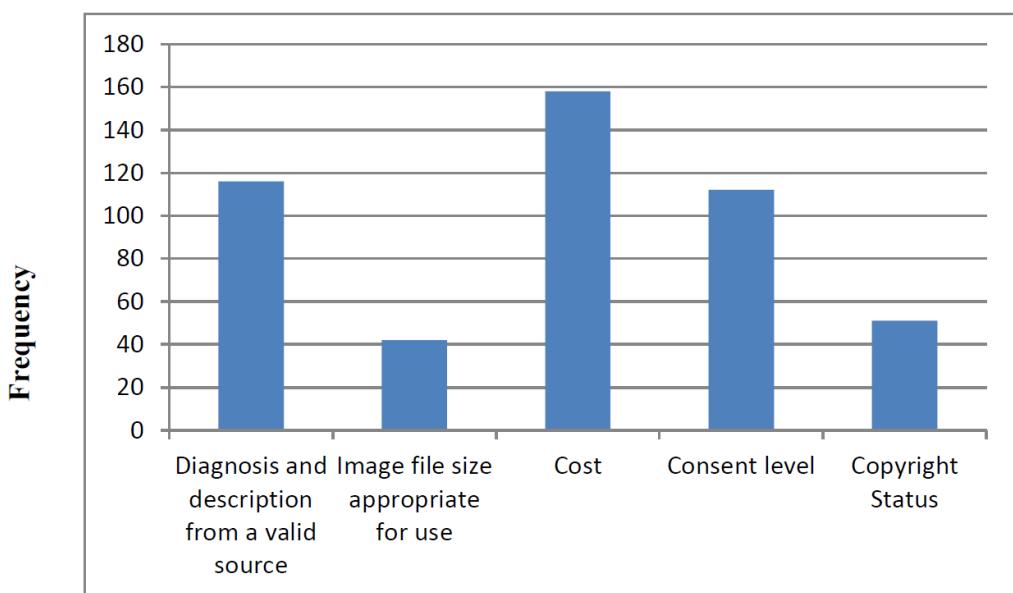


Figure 5. Frequency bar chart showing sourcing of clinical photographs



Factors considered as ‘very important’ when selecting photographs

Figure 6. Frequency bar chart to illustrate number of students considering which factors were ‘Very Important’ when choosing clinical photographs for use.

	2008 Percentage of total student population	Percentage of total survey population
Male	44%	41%
Female	56%	58%

Table 3: Comparison of survey population to 2011 BMA report statistics on gender. (BMA, 2011)

	Percentage of 2008 student population	Percentage of survey sample population
White British	71	72.3
White and Black Caribbean	0.2	0.4
White and Asian	1.8	1.2
Any other Mixed / multiple ethnic background	1.4	1.6
Indian	8.1	4.8
Pakistani	4	2
Bangladeshi	1	0.8
Chinese	2	3.2
Any other Asian background	4	2.4
African	2.5	0.8
Caribbean	0.5	1.2
Other	3.5	9.3

Table 4. Comparison of survey population to 2011 BMA report statistics on ethnicity. (BMA, 2011)