

REVIEW ARTICLE

Case reports and research productivity among Syrian medical students: Review, reality, and suggested solutions

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ABSTRACT

Medical students are precious seeds for better future medical research. Case reports writing may represent a relatively simple first step for beginners. Only 47 case reports are published in the literature by Syrian Medical Institutions compared to more than 500 case reports in a comparable country in the last 5 years. Many obstacles stand against developing fruitful research environment in Syria. Increasing awareness to research productivity in Syria along with comparative analysis is discussed in this article.

Key words: Research productivity, medical students, case reports

INTRODUCTION

Case report is a type of medical literature that represents unique presentation, describes unusual findings or documents a rare disease. Case reports are valuable not only due to the fact that they describe unusual cases, but also they provide an important base for further and more reliable research studies. Usually, limited usefulness in evidence-based practice and bedside clinical decision are expected from such reports. Participation of medical students in research has made important changes in the history of medicine. For instance, in 1921 insulin discovery and purification was made by the researcher Frederick Banting and his 2nd year medical student assistant Charles Best.^[1] Multiple reports described the basic principles of writing case reports.^[2] This is the first review that focuses on Syrian research productivity in case reports and highlights the medical student's activity in this field of medicine.

WHY SHOULD MEDICAL STUDENTS START WITH CASE REPORTS?

Case report is a simple research writing experience. It is a primitive step for medical students in practicing manuscripts

writing and a valuable publication exercise for beginners. Its methodological simplicity may promote the students' abilities in searching the literature, discuss and report their rare clinical findings, enhance their readings, and improve their writing skills. In addition, it could enrich the curriculum vita that distinguishes the authors among their peers and help in pursuing better future academic careers.

METHODS

We explored all common literature search engines (PubMed, Medline, Google Scholar) for all published case reports with the following keywords: (Syria, Syrian Medicine, Damascus University, Aleppo University, Tishreen University, Albaath University, Alforat University, Alkalamoon University, Damascus, Aleppo, Latakia). In the search options, we included articles that the first or last authors are from a Syrian Medical Institution. By comparative analysis, we chose another Arab country that contains the same number

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of medical schools and similar populations' background which is Tunisia. We compared publications achievements and the number of published case reports.

RESULTS

Only 47 case reports from Syrian medical institutes are available in the online published medical literature [Figure 1], 38% of them were published in the period of 2010–2014, 54% from Damascus University, 82% were indexed in PubMed. Eighteen percent of the published case reports are in the field of cardiology, and the majority of cardiology cases are published by the Cardiovascular Surgical Center at Damascus University. Thirteen percent of the cases were in dentistry, 11% in nephrology and oncology [Table 1]. We were not able to determine if any medical students were involved as authors. Comparing these results to case reports published from Tunisia, we found more than 500 published case reports indexed by PubMed in the last 5 years.

DISCUSSION

This article aims to highlight Syrian medical student's activity in the medical research field, focusing on case reports. Here, we try to explore the main reasons for poor research productivity and possible solutions.

Medical students understanding of being a physician-scientist is crucial. Although they believe in the importance of research, actions toward obtaining opportunities are lacking. Burgoyne *et al.*^[3] stated that medical students have a narrow definition of research and what it entails, according to his study; the majority of medical students who are not interested in a career incorporating research, answered that they will avoid it

because of the isolation from patients and clinical practice. In Syria, the only research experience medical students get exposed to during their 6-years medical school is the practical part of preventive medicine during their fifth year, which represents a small cross-sectional study, as part of the curriculum and a mandatory requirement to pass to the sixth year, which lacks any planned intentions to allow student to apply creative ideas or open doors for more discoveries, adding to the fact that schools do not have supportive systems for writing skills or experience in publications.

Diab *et al.*^[4] showed a major deficiency in research productivity in the Syrian medical community. The published medical papers from Syria are in the second level behind agriculture publications, and count only 593 papers which represents the total number of publications from Syrian Medical Institutions.^[4] This gap has many reasons; primarily is the lack of research educative materials and support system at the medical schools levels.

The importance of focusing on medical students comes from what Diez *et al.*^[5] demonstrated; medical students who were involved in research projects while they were at the medical school had superior research productivity after graduation. In addition, National Institute of Health (NIH) presented an excellent model^[6] when they responded to the alarm they identified with the decreased number of physician-scientists in the United States. Many attempts focusing on MD/PhD programs tried to reverse this trend, but NIH focused on medical students. They reported their experience and success when they sponsored Medical Student Research Fellowship Programs for 25 years at the University of Tennessee Health Science Center and Vanderbilt University, NIH program enrolled medical students in summer research projects with a specific program and scientists mentorship. After follow-up, the vast majority of students conducted additional research after their medical student research experience, and a large number of students were doing research or had published or presented their work at scientific meetings. Many obstacles prevent medical students from conducting research were discussed in the medical literature, but in the Middle East World, a cross-sectional study conducted at the King Saud University in Saudi Arabia^[7] showed that lack of professional supervisor, training courses, along with time and funding were the most important causes observed. In Syria, one study evaluated medical students' educational background in evidence-based medicine (EBM), the authors found a significant positive attitude toward improving EBM knowledge and students requested adding EBM to their medical school curriculum.^[8]

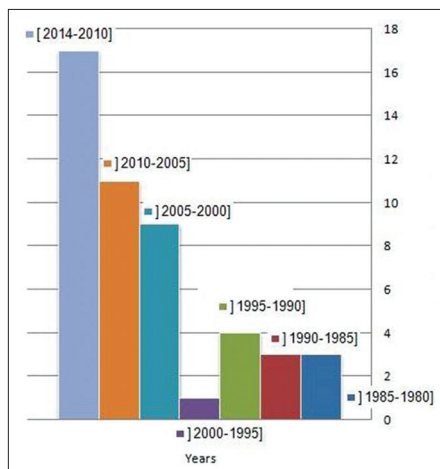


Figure 1: Published case reports since 1980

Table 1: Published case reports from Syrian Medical Institutions

Journal name	Institution	Year of publication	Title
The Saudi Journal for Dental Research	Tishreen	2013	Retraction of the upper maxillary incisors with corticotomy-facilitated orthodontics and mini-implants
Tishreen University Journal for Research and Scientific Studies	Tishreen	2011	Hard- and soft-tissue augmentation after immediate implantation in anterior maxilla with multi-disciplinary approaches; a clinical report
Journal of Digestive Diseases	Tishreen	2014	Pseudoephedrine-induced ischemic colitis: Case report and literature review
The Internet Journal of Dental Science	Tishreen	2009	Oral implant application following free gingival graft and horizontal ridge augmentation: A case report
Pediatric Pulmonology	Tishreen	2002	Laryngeal hirudiniasis: An unusual cause of airway obstruction and hemoptysis
Journal of Cardiac Surgery	Damascus University	2011	Pelvic intravenous leiomyomatosis with transcaval extension to the heart and pulmonary arteries
Pediatric Radiology	Damascus University	2009	Splenorenal fusion in a 26-month-old girl
Pediatric Neurosurgery	Moassat University Hospital Division of Pediatric Neurosurgery, Department of Neurosurgery	2007	Unclassified scaphocephaly with a large posterior parietooccipital bony abnormality
Child's Nervous System	Moassat University Hospital Division of Pediatric Neurosurgery, Department of Neurosurgery	2004	Late appearance of hydrocephalus associated with posttraumatic intradiploic arachnoid cyst
Asian Cardiovascular and Thoracic Annals	Damascus University	2003	Giant substernal goiter with chylothorax
The Journal of Heart Valve Disease	Damascus University (cardiovascular surgical center)	2000	The mitral pulmonary autograft: A follow-up cautionary report
Gastrointestinal Endoscopy	AL-Assad University Hospital Gastroenterology Center	1997	The whirlpool jet technique for removal of pancreatic duct ascaris
British Journal of Urology	Moassat University hospital (urology)	1994	The use of a buccal mucosa patch graft in the management of a large urethrocutaneous fistula
The Journal of Cardiovascular Surgery	Damascus University (cardiology)	1992	Surgical management of cardiac echinococcosis
Arab Journal of Gastroenterology	Division of Gastroenterology, Department of Internal Medicine, School of Medicine, Aleppo University	2012	Sclerosing mesenteritis: A rare case of large bowel and rectum involvement
Current Opinion in Endocrinology, Diabetes and Obesity	Aleppo	2001	Hypokalemia in pregnancy: Clue to Gitelman syndrome
Angiology, The Journal of Vascular Disease		1983	Persistent eustachian valve causing severe cyanosis in atrial septal defect with normal right heart pressures
Chest	From the Division of Cardiology, Department of Medicine, Damascus University School of Medicine	1980	Hypocalcemic cardiomyopathy
International Journal of Pediatric Dentistry	Department of pediatric dentistry Damascus University School of Dentistry	2002	Riga-Fede disease: Association with microcephaly
Angiology	Damascus University School of Medicine and Mouassat University Hospital	1982	Hypoplasia of descending aorta as a rare cause of hypertension report of 5 cases
The Annals of Thoracic Surgery	Damascus University Cardiovascular Surgical Center; Damascus, Syria	1993	Atrial myxoma: Report of 24 operations using the biatrial approach
Asian Cardiovascular and Thoracic Annals	Damascus University Cardiovascular Surgical Center	2007	Surgical experience with cardiac echinococcosis
Bulletin de la Société de pathologie exotique	Hôpital Mouassat, Laboratoire Central, Université de Damas, Syrie	1991	Human cutaneous leishmaniasis caused by Leishmania major MON-26 in the region of Damascus (Syria)
Journal of Pakistan Association of Dermatologists	Department of Dermatology and Venereology, Aleppo University Hospital, Syria	2014	Bullous ichthyosiform erythroderma: Case presentation
The Journal of Pediatric Dentistry	Department of Pediatric Dentistry, Damascus University School of Dentistry, Syria	2001	Riga-Fede disease: Report of a case and review

Contd...

Table 1: Contd...

Journal name	Institution	Year of publication	Title
Saudi Medical Journal	From the Department of Surgery (Fakhouri), Neurosurgery Division, and the Department of Pathology (Frasheh), Aleppo University Hospital, Aleppo, Syria	2014	Primary Ewing's sarcoma of the anterior fontanelle in a neonate
Egyptian Dermatology Online Journal	Dermatology and Venereology Department, Aleppo University Hospital, Aleppo, Syria	2014	Autosomal recessive plasma cell panniculitis with morphea-like clinical manifestation
Clinical Nephrology	Department of Medicine, University of Aleppo, Aleppo, Syria	2013	Renal cortical necrosis following a colonoscopy
Balkan Journal of Medical Genetics	Atomic Energy Commission of Syria, Damascus, Syria	2013	Molecular cytogenetic characterization of an inv (Y) (p11.2q11.221~q11.222) in a Syrian family
Clinics and Research in Hepatology and Gastroenterology	Department of Gastroenterology, Saint-Louis Hospital	2013	Acute recurrent pancreatitis secondary to the rare association of a duodenal duplication cyst and a pancreas divisum
Molecular Cytogenetics	Atomic Energy Commission, Damascus, Syria	2010	Partial trisomy 9p22-9p24.2 in combination with partial monosomy 9pter in a Syrian girl
Saudi Journal of Kidney Diseases and Transplantation	Ibn-Alnafis Medical Complex	2008	Cyclosporin-A induced posterior reversible encephalopathy syndrome
Saudi Journal of Kidney Diseases and Transplantation	Ibn-Alnafis Medical Complex	2004	Varicella-induced remission of steroid-resistant nephrotic syndrome in a child
Dermatology Online Journal	Ministry of Health	2005	Keratosis lichenoides chronica: Report of a new case with partial response to PUVA therapy
Dermatology Online Journal	Ministry of Health, Syria-Hama	2009	Treatment of crusted scabies with albendazole: A case report
Saudi Journal of Kidney Diseases and Transplantation	Division of Pediatric Nephrology, Surgical Kidney Hospital, Ibn-Alnafis Medical Complex, Damascus, Syria	2008	Cyclosporin-A induced posterior reversible encephalopathy syndrome
Dermatology Online Journal	Ministry of Health, Syria-Hama	2003	Cicatricial alopecia due to sarcoidosis
Journal of Experimental and Clinical Cancer Research	Molecular Biology and Biotechnology Department, Human Genetics Division, Atomic Energy Commission of Syria, Damascus-Syria	2007	A complex translocation t (5;9;22) in Philadelphia cells involving the short arm of chromosome 5 in a case of chronic myelogenous leukemia
Dermatology Online Journal	Ministry of Health, Syria-Hama	2005	Multiple cutaneous hemangiomas accompanied by hepatic hemangiomas
Human Immunology	Damascus University, College of Medicine, Syrian Arab Republic	2014	Successful kidney transplant in a patient with IgG anti-HLA Class-I auto-antibodies: A case report
Medical Principles Practice	Departments of Biochemistry and Medicine, Damascus University, Damascus, Syria	2008	A 290-base-pair deletion in the beta-globin gene causing β -thalassemia in Syria
Avicenna Journal of Medicine	Pediatric Endocrinology and Metabolic Diseases Unit, University Children Hospital, Faculty of Medicine, Damascus University, Damascus, Syria	2014	Kenny-Caffey syndrome type I
Avicenna Journal of Medicine	Damascus University, Faculty of Medicine	2013	Renal artery embolization for managing uncontrolled hypertension in a kidney transplant candidate
Journal of International Oral Health	Albaath	2014	An unusual side effect of ibuprofen post dental therapy: Increased erectile and libido activity
Digital Journal of Ophthalmology	Department of Ophthalmology, Mouassat University Hospital, Damascus University	2013	Artisan iris-fixated toric phakic intraocular lens for the correction of high astigmatism after deep anterior lamellar keratoplasty
Journal of Fertilization: In-vitro - IVF-Worldwide, Reproductive Medicine, Genetics and Stem Cell Biology	Damascus University	2014	A rare inherited reciprocal translocation found in two male infertile siblings

PUVA: Psoralen plus ultraviolet A, IVF: In-vitro fertilization

CONCLUSION

The multifactorial reasons for lacking case reports productivity in Syria, especially among medical students, fall in the big picture of major deficiency in research and reflect the weak supportive system. Focusing on medical students is strategic and a pivotal step to face the existing reality. Practical research workshops supported by a national board with defined goals, professional supervision by faculty members who have experience in writing skills, introducing attractive and creative opportunities in the school curriculum, are all important requirements for proper environment for future scientists.

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Conflicts of interest

There are no conflicts of interest.

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