TEACHING ENGLISH TO PHARMACY STUDENTS: RESOURCES, IMPORTANCE AND APPLICATIONS[1]

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Abstract. *The aim of this paper is to provide details on the importance of teaching language courses to Pharmacy students, to present some published resources and coursebooks that language instructors in Pharmacy schools could use and, on the practical side, to present a useful application which helps students refresh and strengthen their knowledge of drug names' orthography. The methods of research that we have used are primary and secondary source analysis and the comparative method. The primary sources that have been consulted are regulatory documents of the European Union and of the National Health Service (NHS) of Great Britain, while the referred secondary literature consists in seminal monographs and articles of theoreticians in this field, as well as a selection of articles from the British and Romanian media. Given the scarcity of articles, books and coursebooks that are dedicated to the teaching of foreign languages to Pharmacy students by comparison to those available to General Medicine students, we consider that this is a welcome addition to a, hopefully, growing field within ESL/ESP.*

Keywords: *ESL, ESP, pharmaceutical terminology, communication, language teaching*

In 1937, Professor Adelaide E. Harris was describing in one of the first academic studies in teaching English to Pharmacy students how on the door leading to the School of Pharmacy of her university were two gold lettered words, which sometimes surprised the passers-by: "Pharmacognosy. English". At present, it has become clear that the successful teaching of specialized terminology in English is of utmost importance in the case of medical professionals whose day-to-day activities include interaction with patients and/or with other medical staff with whom they communicate in English. This not only includes pharmacists, but also doctors, dentists, nurses, veterinarians, orderlies, health assistants and consultants, pharmacy assistants, pharmacy and dental technicians and laboratory technicians, etc. In today's globalized society most communication at high levels is carried out in English, especially in the medical field where a large part of the patients as well as staff do not share the same cultural and linguistic background.

In the health sectors of some countries in the English-speaking world, the percentage of staff members who are foreign ranges from one quarter in the United States and the United Kingdom (see Fisher and Siddique), to as high as 68.9% in Australia (where most health professionals hail from India, the Philippines, Nepal, or from Africa, see Negin et al.). While statistics such as these prove that medical professionals wishing to work in the US, UK or Australia have to rely on English as the language of communication with their co-workers, English language skills benefit students of Pharmacy who are well acquainted with pharmaceutical and medical terminology by allowing them to inform themselves from top academic journals, where the newest developments in their field of work can be accessed. Unfortunately, Romanian pharmacists and doctors also seek foreign language expertise with

[1] Part of the findings presented in the first and second parts of this study have been published in a different form in Coroban 2018.

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the purpose of migrating to more developed states owing to a multitude of economic and social push and pull factors.

Resources

Current literature in the field is not very ample, as most monographs and studies in the field tend to focus on the teaching of medical terminology in general rather than focusing on the specific needs of Pharmacy students. Increasing academic awareness towards the importance of patient-doctor communication is still a rather recent development, dating from the last decades of the 20th century or from the first decades of the 21st century. Recent literature that treats the subject of medical professional-patient communication for doctors is extensive, consisting of monographs and studies referring to subjects such as protocols for delivering bad news and offering hope, discussing alternative treatments and compliance, or the importance of establishing rapport with the patient. Articles by Berardo, and an older one by Stupans, March and Elliot, acclaim the necessity and usefulness of providing training in language skills to Pharmacy students and provide irrefutable proof that, in a multilingual and transnational context, improved pronunciation, grammar, choice of vocabulary and cross-cultural communication skills are invaluable.

Moving on to coursebooks that are available for instructors, notable resources include coursebooks such as *English for the Pharmaceutical Industry* edited by Bücheler et al. (2010), *English for Pharmacy Writing and Oral Communication* by Díaz-Gilbert (2009), or *English for Pharmacy and Parapharmacy* by Giner et al.

English for the Pharmaceutical Industry is probably the most useful resource on the market at the moment for Pharmacy students of at least an intermediate level. The authors mention that their book is designed to "equip learners with the linguistic skills and specialist vocabulary necessary to understand daily situations in a work environment" (Bücheler et al. 4) and, after three years of using this book with second-year Pharmacy students we can opinionate that it is one of the most professional and helpful resource an educator could wish for, with excellent recordings that not only help boost students' knowledge in pharmaceutical terminology but also help introduce the learner to the specific culture and climate of corporate pharmaceutics. The only downside to using this exceptional learning tool is that it is not very extensive, as it includes only six chapters with an additional final test unit and partner dialogues, useful phrases, listening extracts, and an A-Z wordlist.

English for Pharmacy Writing and Oral Communication is much more extensive but generally less interactive yet a lot denser in terminology related to anatomy and exercises. It is most practically used by students who have attained at least an intermediate level of English and it stands out among other resources due to its rich collection of pharmacy dialogues, which are thematically organized to match the chapters of the book. No other coursebook or language book for pharmacists can boast such a wealth of over 60 pages of pharmacy dialogues categorized according to anatomical components (for instance, mouth and nose, urinary system, ears and eyes, etc.). An interesting aspect of this workbook is that the author offers direct advice to speakers of some nationalities as regards the pronunciation difficulties they might face when speaking English. For instance, in the first chapter, Russian speakers are warned that:

> The 'w' consonant is pronounced like a 'v' and the 'v' sounds like a 'w.' Pay careful attention to the English 'th.' It is not pronounced 's.'

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> For example, in English,
> wart is not pronounced vart
> vein is not pronounced wein
> thank is not pronounced sank
> thought is not pronounced sought (Díaz-Gilbert 13).

Such indications of the author are useful and practical, and are probably the result of years of teaching English in an international medical school, with students from all over the world. Most often the author's pronunciation indications cater to native speakers of Spanish, Vietnamese, Gujarati, Korean, Chinese and Russian. Unfortunately, one of the disadvantages of relying on this resource for listening exercises is that the recordings have to be accessed on-line, therefore the instructor depends on a stable internet connection.

English for Pharmacy and Parapharmacy is a useful coursebook for students whose English language level is below intermediate. Beside vocabulary exercises on topics such as "Sanitary products", "Phytotherapy" or "Dermopharmacy" (subjects which are not commonly tackled in other such manuals), it also teaches beginner-level grammar ("Present simple", "There is, There are", "Present Continuous", etc.) and writing exercises ("Describing yourself", "Elaborate your diet", etc.). Appendices include a list of verbs and a vocabulary. The number of applications could be greater, some pages contain no exercises at all (only broad text for reading exercises with no rubric or just diagrams) and there are usually only two exercises per page (some with few test items or questions). It could be argued that the authors did not want to risk overwhelming the student with beginner- or elementary-level knowledge in English. There are similar workbooks published in the Czech Republic (Havlíčková, Dostálová and Katerová) or Italy (Benigni), but they are not designed for use by English instructors elsewhere as they contain learning material in the native language of the author. Therefore, *English for Pharmacy and Parapharmacy* remains a useful option for instructors of English in Pharmacy schools elsewhere who are teaching at a beginner or lower-intermediate level.

After this brief literature review I propose to turn to the advantages offered by a good command of English in the case of pharmacists and the general advantages offered by adequate knowledge of specialized terminology in English (for the importance of terminology see, for example, Buzarna-Tihenea). An article by Westberg and Sorensen notes:

> Pharmacists who provide services to diverse populations must be aware of and take into consideration the cultural health beliefs, language needs, or other unique aspects involved in providing care to patients from diverse groups. The profession needs to fully understand the cultural as well as the medical needs of patients to care for them effectively. In addition to the individual relationships built between practitioner and patient, pharmacists must be aware of what health-related differences, if any, may be encountered in patients from other cultures, including those for whom English is not their primary language. Unmet, or even unidentified, needs may be present in these patients (Westberg and Sorensen 2005, 49).

The results of a 2004 questionnaire survey on the teaching of social sciences to undergraduates in 62 Pharmacy schools across North America and Europe showed that, for all the years of study, the most taught non-medical discipline was *Communication skills*

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(Ryan et al. 4). The only courses which were taught as often as *Communication skills* (but not across all four years of theoretical study) were: *History of medicine*, which was equally taught among first-year students; first- and third-year undergraduates studied *Health promotion/education* as often as Communication skills; second- and third-year students were offered *Laws & Ethics*, while *Business Management/Social & Administrative Pharmacy* was equally taught to third- and fourth-year undergraduates. In Romania, according to ARACIS stipulations, Pharmacy schools usually offer language courses as "complementary disciplines" (two hours of practical course per week for fourteen weeks in one semester) only during the first two years of study (mostly in English and sometimes in French, German or Spanish), while *Ethics*, *Economics* or *Communication* courses are usually taught during the last two years of study (out of five). Pharmacy students can follow a *Communication* course (taught in Romanian) most often in the form of an "optional discipline", while for Pharmacy Assistants' undergraduates *Communication with the Patient* is a mandatory "specialty discipline". It is probable that in the survey of Ryan et al. *Communication skills* would have returned a higher frequency among pharmacy schools' curricula if the research had only included schools from non-English-speaking countries. Since the survey dates back to 2004, it would be very interesting to observe more recent changes and trends in the teaching of social sciences in Pharmacy schools. The authors of the survey themselves admit that their work, although unique and necessary, represented "a 'snap-shot' of teaching activity in 2004 and cannot be considered in any way a comprehensive depiction" (Ryan et al. 7). Moreover, since their focus was to study the development of *Social Pharmacy* as a discipline, the authors do not mention whether by *Communication skills* they refer to language courses exclusively, to patient communication courses, or to both of these types of courses. Nevertheless, by comparing the results of the mentioned survey with the situation in Romania, it becomes evident that, abroad, communication skills are more consistently taught, during the entire period of the students' formation as pharmacists, while in Romania Pharmacy students can expect to study languages or communication only during their first two years and optionally during the fifth (last) year.

Importance

In the case of Romania, the need for better foreign language skills in the medical professions is also a consequence of the migration of workforce in the Health sector towards countries where medical professionals work in better conditions and are better paid. This process, which can be considered a part of the East-West brain-drain, has intensified after the country's admission into the EU in 2007 owing to the EU-wide recognition of medical qualifications, with as much as four hundred daily applications of transfer abroad reported by the Ministry of Health (Feraru) and having amounted to a crisis. According to a 2017 sociological inquiry, the majority of Romanian students enrolled in Medical and Pharmacy Universities currently consider working abroad a better alternative than practicing medicine in their home country (Suciu et al.). Statistical data from the EU's Regulated professions database (2018) illustrated in Figures 1, 2 and 3 shows that pharmacists qualified in Romania who emigrate chose to work in the United Kingdom (38%), Belgium (11%), Germany (10%), Italy and Hungary (each with 6%) and in other countries (29%). In the case of doctors, the countries of preference are the United Kingdom and Germany (each with 23%), Belgium (15%), Sweden (8%), and France (7%). The vast majority of nurses trained in Romania tend

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to emigrate to the United Kingdom (52%) and Italy (22%), few of them choosing to work in Belgium (8%), or in Germany or Switzerland (each with 3%).

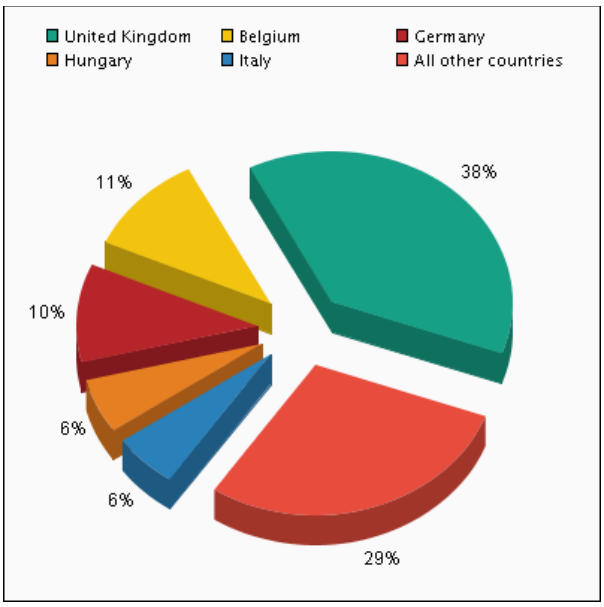


Figure 1. Migration preferences of pharmacists trained in Romania 1997/1998-2016. Source: http://ec.europa.eu/growth/tools-databases/regprof/index.cfm

Data from 2013 presented by the President of the College of Pharmacists from Romania showed that over 80% of Romanian pharmacists who left the country went to work in the United Kingdom and Ireland, the rest preferring Germany or France (Calistru). The same authority opined that the reason why pharmacists too were leaving Romania was that, even though a junior pharmacist's remuneration at that time was higher than that of a resident, the amount was slowly decreasing owing to higher competition on the job market.

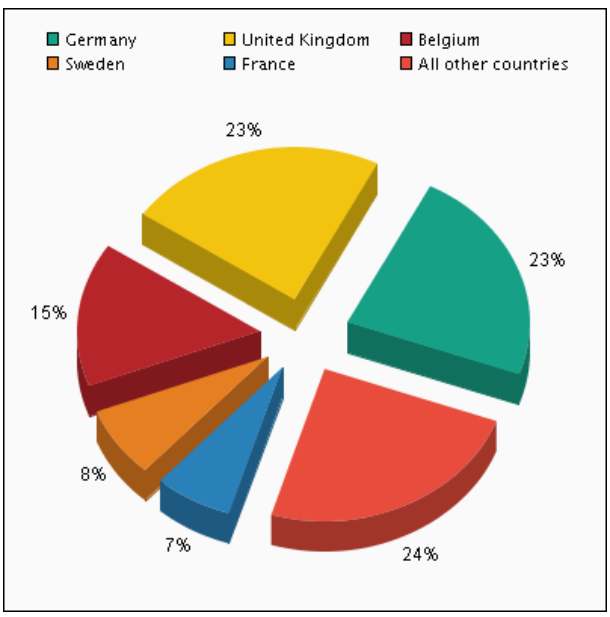


Figure 2. Migration preferences of doctors trained in Romania 1997/1998-2016. Source: http://ec.europa.eu/growth/tools-databases/regprof/index.cfm

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This statistical evidence suggests that in the current context of qualified workforce migration in the medical field in Romania, the preferred country of destination is the United Kingdom, which reinforces our thesis that adequate knowledge of English-language terminology in the pharmaceutical field is preferable. What remains to be seen is the impact of Brexit on these migration trends within the healthcare industry and whether such large percentages of Romanian medical professionals will continue to migrate to the United Kingdom. Since pharmacists, doctors and nurses are highly qualified migrants, it is possible that the NHS in the UK will continue to accept EU-qualified medical professionals even after Brexit will take effect in 2019, but certain migration barriers might appear, including more bureaucracy in the process of qualification recognition and more difficult language examinations for medical professionals from the European Union.

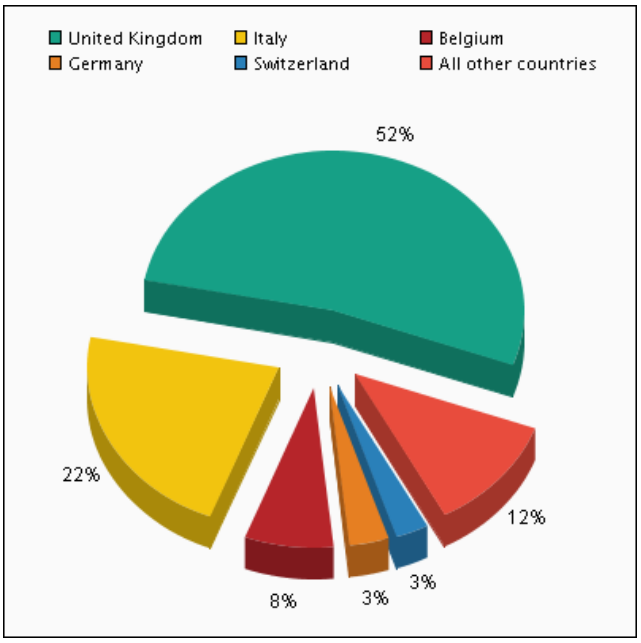


Figure 3. Migration preferences of nurses trained in Romania 1997/1998-2016. Source: http://ec.europa.eu/growth/tools-databases/regprof/index.cfm

As shown in a previous study of ours (see Coroban), the World Health Organization draws attention to the problem that, because a huge body of medical information is only available in English, most of the inhabitants of the planet, who do not speak English, are deprived from precious sources of knowledge on rare conditions, which, for example, may not be readily available in Romanian or, for example, Chinese: "Language can be a barrier to accessing relevant and high quality health information and delivering appropriate health care – an unmet need that is amplified on a global scale" (WHO 2015).

As regards linguistic requirements in the Health field, European Union regulations direct that:

> In the majority of the Member States, a certain level of linguistic ability is required for workers within the medical sector, being private or public - either per sector or per post through specific legislation covering health personnel, legislation generally

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> applicable to regulated professions or administrative practice. […] The medical professions may include posts such as physicians/doctors, dentists, pharmacists, veterinarians, ergotherapists, nurses, midwives, paramedics, elderly care personnel, dermatologist, certain laboratory professionals and barber-surgeons (Austria, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Finland, Germany, Hungary, Ireland, Lithuania, Poland, Slovakia, Slovenia, Sweden, The Netherlands and United Kingdom). Health personnel appear to be either required to dispose of the required language skills in order to receive admission for practicing a specific profession, or the enforcement of language requirements rests with the employer. (qtd. in Jensen 26)

As far back as 2011, it was revealed that "Patient and employer complaints about foreign doctors who lack proficiency in a country's official language are prompting a reconsideration of language requirements for doctors seeking to practise within the European Economic Area, which includes all 27 European Union member states, along with Norway, Iceland and Liechtenstein. The European Commission is now conducting consultations on revisions to the existing Professional Qualifications Directive and plans to issue an updated version…" (Villanueva). Surprisingly, in Romania, according to Law no. 95/2006 on Health Care Reform, there was no language requirement at all for the employment of physicians and doctors, which was contrary to legislation in the rest of the European Union member states. Only in 2016 the mentioned law was amended through a Government ordinance with the introduction of article 410 paragraph 1 stating that the verification of language skills is limited to the Romanian language skills as it is the official language of the state. In spite of this provision, according to article 384 of the same law, medical professionals in Romania can take their oath in the Romanian language or in any of the commonly used languages of the European Union.

In the United Kingdom, the General Medical Council's *Good medical practice* (from 2013) states that medical professional "must have the necessary knowledge of the English language to provide a good standard of practice and care in the UK". Stricter language regulations had been introduced since 2013, when cases of mistreatment resulting in patient's death owing to poor English skills had been revealed to the press. In 2013 *The Guardian* mentioned the case of a physician with German citizenship whose indications caused the accidental death of a patient. This tragedy took place while the physician was working as an out-of-hours GP and administered a tenfold analgesics overdose to the 70-year-old victim. After the introduction of stricter language testing regulations for medical professionals, in 2015, it was revealed that 45% of applicants were not able to prove their language skills were sufficient and, in consequence, were denied practice by the GMC (Meikle et al.). More recently, it was revealed that EU law actually protects European doctors working in the UK, which results in this category of medical professionals in Britain being three times more likely to receive sanctions for mistakes that are owed to poor language skills (Knapton). Consequently, there have been calls that, given the political opportunity for new regulations opened by Brexit, EU nationals working in the health field in the UK should be required to take the newer and more demanding language tests, as "Patient safety is of the utmost importance, and we expect all healthcare professionals working in the UK to have a good

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command of the English language" according to sources from the British Department of Health (Knapton).

Based on the updated version of The Pharmacy Order 2010 of the UK government and on the *Health Care and Associated Professions (Knowledge of English) Order* of 2015, in the *Guidance on Evidence of English Language Skills* (issued in 2016) it is particularly specified that:

> Previously, if a pharmacy professional was a national of the European Economic Area (EEA) or Switzerland, we could not check their English language skills before we registered them. We were only able to check the English language skills of non-EEA nationals who qualified outside the EEA. This new law improves public protection. It enables us to introduce fair and proportionate language controls that would apply to all registrants and applicants for registration irrespective of nationality or country of qualification and gives the registrar powers to request evidence or information about a pharmacy professional's knowledge of English in certain circumstances (3).

The same document specifies afterwards that the applicant must demonstrate knowledge in four areas: *Reading*, *Writing*, *Listening* and *Speaking in English*. The evidence of English language skills accepted from UK-qualified applicants include a GPhC-accredited Master of Pharmacy diploma issued by a British university, or pre-registration training and the registration assessment within the UK. Those who were trained as pharmacists outside the UK and wish to demonstrate their knowledge of English can submit: an academic IELTS diploma with a score no less than 7 in each area and not older than two years (otherwise evidence of using the English language in the meantime would have to be provided), a recent pharmacy degree obtained in an English-speaking country other than the UK, or evidence of at least two years of practice as a professional pharmacist in an English-speaking country.

Applications

From a more practical point of view, an instructor of English in a school of Pharmacy would benefit from acknowledging gender differences in speaking English (see the studies of Oancea) as well as in language learning strategies, given that, in Romanian universities at least, the vast majority of Pharmacy, Pharmacy Assistants or Nursing students are women, in contrast to Romanian schools of Medicine, where gender distribution is more equal. Pharmacy as a medical profession seems to appeal the most to women because

> The increasing number of chain pharmacies created an opportunity for female pharmacists to work in a retail setting with flexible scheduling options. With staff pharmacist positions readily available, women could leave the profession during their childbearing years and return to work part-time. At the same time, it has been suggested that men, being more likely to choose pharmacy for its entrepreneurial opportunities, became more reluctant to enter pharmacy as prospects for ownership declined with the advent of chain pharmacies; as men have left the profession, women have stepped in to fill the gap (Janzen et al. 2013).

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Returning to English language skills, an ample study on a cohort of Greek ESL learners submitted as an MA thesis by Karvouna-Gkarampliana has produced interesting results. Using the SILL (Strategy Inventory for Language Learning) questionnaire devised by R. Oxford in the early 1990s as well as the interview technique, the author concluded that, given

> the majority of both male and female participants appear to implement the Affective LLS less frequently than the rest of the strategies examined, I consider that it would be necessary for the teachers to provide proper instruction on the use of Affective LLS to their students. One way to achieve it could be to encourage them to believe in themselves and their abilities to deal with tasks in the TL successfully (Karvouna-Gkarampliana 60).

As regards gender differences, the literature generally recommends that, considering the fact that women naturally tend to use a wide variety of LLS (Language Learning Strategies), instructors should devote more of their energy towards male learners by integrating them into mixed groups or organizing work in pair activities with pairs consisting of fast and slow learners, given "the popular notion that females hold the advantage in verbal skills such as speech emergence, articulation, fluency, and length of statement" but "both men and women appear to have the potential to achieve similarly well when provided with a broad choice of learning strategies and the allowance to follow their own pathway to success" (Nyikos 273).

From the point of view of teaching content, many study resources, including the ones presented in the first part of this study, offer topics more connected to medical terminology in general (e.g. the digestive system, herbal remedies, drugs, vitamins, nutrition, the cardiovascular system, etc.). A topic which is less covered and which would greatly benefit future pharmacists may be the study of the orthography of *drug names* and *drug nomenclature* (more exactly, their capitalization). Students should be reminded that pharmacists, pharmacy assistant and technicians are sometimes quizzed at interviews by possible employers on distinguishing generical, chemical or brand names of drugs, which represents a fundamental skill for the profession (Winnipeg College 2008). It is therefore important to mark the difference between different drug denominations:

- the *chemical name* (most students would remember from their high-school chemistry lessons that for chemical nomenclature they should refer to the IUPAC names); the difficulty brought by the use of chemical names in an English course for Pharmacy students is that chemical names tend to be rather long and complex, even for well-known drugs such as ibuprofen, i.e. (RS)-2-(4-(2-methylpropyl)phenyl)propanoic acid; bearing this in mind, from a pedagogical point of view it would be sensible to avoid using or testing chemical drug names in the English classroom, yet the students should be informed what chemical denomination is and how to recognize it, and could benefit from exercising the spelling out chemical names;

- the *nonproprietary* or *generic name* usually indicates through a suffix or prefix to what category the drug belongs. For example, acyclovir presents the "-vir" suffix which is specific to antiviral medications. The generic name may be different from country to country. When a company develops a new drug, it has to apply for a nonproprietary (generic) name with the national regulatory agency as well as for an International Nonproprietary Name (INN) through the World Health Organization (WHO). Students should be reminded that

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generic names, unlike brand names, can be written starting with a lower-case letter: aspirin, acetaminophen, diazepam, cloxacilin, diclofenac, ketorolac, lidocaine, omeprazole, etc., but at the beginning of a sentence these names should be capitalized as usual.

- the *brand name* is the trademark name given by the company to the drug, as such it always begins with a capital (unless the trademark itself does not, which is very rare). In specialty literature, the trade name of a drug is usually given in parentheses after the nonproprietary name, but most of the time researchers who are performing studies on a new chemical compound will employ the generic name as they are working with the drug itself, not with a specific brand. For example: "As prophylaxis, the patient was prescribed a five-day course of amoxycillin and clavulanate potassium (Amoxiclav)."

After the presentation of this information in class, students could be asked to correct the capitalization of sentences containing all three types of drug names (see Fig. 4). Instructors could easily devise other types of test items (true or false, matching, multiple choice) based on the variations in the capitalization of different drug names.

Figure 4. What's in a name? Practical activity (examples sentences from sentencedict.com).

Practice the correct capitalization of drug names in the following sentences:

a) the state practices monopoly for the purchase and marketing of ephedrine.
b) benzodiazepines, such as diazepam (valium), clonazepam (klonopin, rivotril), and lorazepam (ativan) reduce spasticity by acting on the central nervous system.
c) panadol is a painkiller. its active ingredient is acetaminophen or paracetamol.
d) if they don't have tylenol, just get me regular aspirin.
e) acyclovir palmitate (acvp) was synthesized from acyclovir (acv) and palmitoyl chloride.

Key: a) The; b) Benzodiazepines, Valium, Klonopin, Rivotril, Ativan; c) Panadol; d) If, Tylenol; e) Acyclovir, ACVP, ACV.

Conclusion

The great diversity among healthcare staff worldwide as well as recent trends, for example greater exigency in regard to language proficiency within medical professions, as competition for jobs is on the rise, suggests that it is important to promote communication skills in the curricula of pharmaceutical and medical schools. Excellent language and communication skills are also required in the case of those health professionals who are mostly concerned with research. In the pharmaceutical industry, medical writing has become so specialized that it has developed two distinct branches: *regulatory medical writing* and *educational medical writing* (Albert). As the previously mentioned authors point out, writing something down does not guarantee getting a message across from one person to another (Albert 26). The exigencies of medical writing have grown in accordance with the recent development in the pharmaceutical field and with the arrival of stricter regulation of clinical trial documents, case

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reports, investigation brochures, patient consent forms, research protocols, and regulatory documents in general. There are also emerging subdomains of medical writing such as marketing-focused writing or medical journalism writing.

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