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A CRITICAL ACCOUNT OF THE CURRENT APPROACH TO EDUCATION IN CLINICAL PSYCHOPHARMACOLOGY

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INTRODUCTION

The era of modern clinical psychopharmacotherapy started in 1952, when chlorpromazine was used for the first time in treating schizophrenia (Delay & Deniker 1952). The discovery of antipsychotic effects of chlorpromazine was not an effect of meticulous study of chemical compounds, but while searching for a more adequate antihistamine for provoking a more efficient narcotic effect. The finding that chlorpromazine is efficient in treating psychotic symptoms started a wave of studies synthesising phenothiazine compounds in order to create more efficient drugs, with less side effects than chlorpromazine. This in turn led to the discovery of the effects of imipramine in people with depression. Thus, the era of antidepressants started in parallel with the era of antipsychotic agents, both practically by accident. These classes of drugs also had a significant role in studies of various mechanisms of action of the nervous system, especially that of neurotransmission. This in turn opened way for an even more adequate use of psychopharmacological agents in the treatment of certain mental illnesses.

In parallel with dynamic production of various psychiatric drugs, arose the need for educating therapists prescribing these drugs. In the beginnings, education provided as part of undergraduate medical studies was sufficient to cover the scope of knowledge in clinical psychopharmacology. The surge of investigations, especially on the level of pharmacology, lead to a rapid increase in information, which necessarily had to be conveyed also to prescribing practitioners in mental health. The curricula of teaching at medical faculties became adequate only for providing initial information and the teaching had to be continued within psychiatric institutions and various professional associations. Still, basic teaching curricula remain the "crucial piece of the puzzle" (Glick & Zisook 2005). The pharmaceutical companies were quick to recognise commercial interest in training provision that would go along introducing drugs to a huge and open market. In frequent gatherings they organise, sometimes jointly with psychiatric institutions or associations, information is provided on these products, aiming primarily to advertise, or to inform about current studies of their side-effects. With their implicit promise of continuing sponsoring, they exert subtle pressure on the lecturers, lessening their academic independence (Dubovski 2005). Lately, in the absence of new drugs appearing, presentations are made on well-known psychopharmacological agents. One easily forgets that pharmaceutical industry and medicine simply have "fundamentally different aims" (Brodkey 2005). It seems that the social aspect of the field of clinical psychopharmacology is currently characterised by fast succession of congresses, symposia, and other scientific and professional gatherings organised by various psychiatric associations. These gatherings are themselves characterised primarily not by novelty, but by a constant increase in attendance fees.

METHOD

This paper is based on the search for information on forms and contents of education in clinical psychopharmacology as offered in the relevant medical sources. Forms of education about research methods specific for psychopharmacology are not covered, as they are usually included in graduate, doctoral, and postdoctoral study programs. Much of the discussion rests on teaching experiences of authors on various levels and study programmes.

RESULTS

In principle, theoretical knowledge or new experiences gained through practice should be transferred to practice as soon as possible. The transfer of knowledge involves "seven principles to guide teaching practice" (Kaufman 2003):

- The learner should be an active contributor to the educational process;
- Learning should closely relate to understanding and solving real life problems;
- Learners' current knowledge and experience are critical in new learning situations and need to be taken into account;
- Learners should be given the opportunity and support to use self direction in their learning;

- Learners should be given opportunities and support for practice, accompanied by self assessment and constructive feedback from teachers and peers;
- Learners should be given opportunities to reflect on their practice; this involves analysing and assessing their own performance and developing new perspectives and options;
- Use of role models by medical educators has a major impact on learners.

Educators in medicine nowadays have little time to devote to issues that are considered to be of extreme importance in adult learning, such as motivation, not to mention individual differences in learning styles (Knowles et al. 2005). Some authors, on the other hand, do propose novel and innovative modes of teaching, attempting to utilise the principles of adult learning (e.g. Stahl & Davis 2009a, Zisook et al. 2005).

Settings in which education in clinical psychopharmacology takes place continuously are:

- Faculties of medicine and of psychology, where students learn about psychopharmacology in relatively general terms, and only about the principles of how drugs are used in clinical practice. Graduate courses are usually focused on a) research methods in medicine (psychiatry), or b) findings of research studies in psychopharmacology.
- Continuing medical education (CME). In CME, the participants mostly get familiarised with the new information on psychopharmacological drugs. But exactly how useful is this sort of education for practical work? Stahl et al. (2006) stress that *"The goal of modern CME is not only to facilitate learning and knowledge translation, but to evaluate whether these outcomes have occurred. Although further research will be required to develop practical, affordable, and proven methods that are capable of measuring the extent to which a CME activity facilitates sustained knowledge translation into clinical practice, it is already possible to incorporate participant-focused educational designs, measurements of learning with pre- and posttesting, and case-based exercises to assess whether the translation of knowledge into proxies of clinical practice is now beginning to occur".* Modern analyses of teaching modalities used in CME provide considerable criticism, but also valuable recommendations for changes in how CME is organised (Marinopoulos et al. 2007).
- General gatherings (congresses, symposia, conferences, workshops etc.), organised by various psychiatric associations (APA, WPA etc.). Thanks to considerable support by pharmaceutical companies, most of these gatherings include presentations on the effects of psychopharmaceutical agents. But exactly how much of the knowledge the participant was exposed to on such gatherings, is easily transferable to their subsequent practice? It is believed (Brookfield 1986, Davis 2005) that on a scale of learning one retains differing amounts of information depending on the mode of teaching: 5% of information is retained after lecture, 10% after reading, 20% after exposure to audio-visual presentation, 30% after practical demonstration, 50% after participation in a discussion group, 75% is retained by those who learn by doing. Teaching others, or immediately using what was learnt - leads to a retention of 90%. If one takes into account the fact that these gatherings rest primarily on lecturing as a mode of teaching, it is quite reasonable to assume that such gathering have very limited informative value. Some innovative approaches to delivering presentations in psychopharmacology are offered by Stahl and Davis (2009b, 2009c).
- Psychopharmacological associations (CINP, ECNP, various national psychopharmacological associations) - gatherings specific for the field of psychopharmacology, but still can be more broad and comprehensive so as to cover the entire scope of the field, or limited to a narrow topic. Lectures dominate here as a mode of education as well. Nowadays, special symposia are organised that are devoted to the topic of teaching of psychopharmacology.
- Textbooks and periodicals are of extreme importance in the process of education in psychopharmacology on any level. While textbooks aim to provide students with most general and structured grasp of the field, it is by definition late in relation to current knowledge. Periodicals present fresh experiences, bringing the reader close to what is up-to-date. Of course, publishers also offer monographs that comprehensively cover individual segments of psychopharmacotherapy.

DISCUSSION

Given the possibilities and risks related to the use of modern psychopharmacological agents, one must ask a question about the adequacy of knowledge of those prescribing these drugs. Is the increasing complexity of psychopharmacology and of the amount of information on the action and effects of various psychiatric drugs, adequately reflected in protocols? In either case, does knowledge become obsolete if the therapist strictly adheres to the protocol (which is often the case)? Or, does he or she in reality need more knowledge than ever before? One easily forgets that the use of expert guidelines is limited by their reliance on the Diagnostic and Statistical Manual of Mental Disorders (Salzman 2005). To establish a clear diagnosis is crucial before attempting to start a serious pharmacotherapeutic approach (Salzman et al. 2010).

In reality, the knowledge on psychopharmacology seen in general practitioners, or physicians of other specialties (who do prescribe these drugs), is often insufficient and actually bears considerable risks for the patients. Nowadays, social workers active in the field of

mental healthcare provision require serious knowledge of the principles of psychopharmacology (Farmer et al. 2006). Granting psychologists that undertake special training to prescribe psychoactive drugs started from positive experience with military psychologists (Levant & Shapiro 2002), while today the main argument for extending these rights to other professions other than psychiatry, is in the perceived crisis of mental health services that are not able to provide for all the mental health needs of society (Lavoie & Barone 2006). Today, some studies show that psychologists that underwent special training in order to prescribe drugs have an advantage over other professions, including physicians and nurses. Also, nurses working in psychiatric settings excel in their knowledge on psychopharmacotherapy compared to physicians prior to specialty training in psychiatry (Muse & McGrath 2009). Today, education in psychopharmacology must take into account the framework of mental healthcare provision services, which is essentially the framework of "collaborative treatment" (Ellison 2005).

If one looks at the forms of education in psychotherapy, the process of licensing, it seems as though psychopharmacology is not treated with adequate rigor compared to other forms of therapy, and certainly not in proportion with its relative importance, at least in the work of psychiatrists. Also, forms of education in psychopharmacology rarely insist on making a direct link transferring newly gained knowledge to practice. Commonly, education is focused on theoretical knowledge and learning ever more complex findings in genetics, biochemistry, molecular biology, pharmacology, and other basic disciplines. Information from these fields is seen as "essential elements of training" (Glick et al. 2007). Knowledge of psychological mechanisms related to the use of psychoactive drugs is also of extreme value (Mintz 2005). Certainly, such knowledge must not be disregarded, but for practicing therapists, especially general practitioners, exchange of practical experiences (dose, selection and combination of drugs, early recognition of adverse effects etc.) is of primary interest.

CONCLUSION

Education in clinical psychopharmacotherapy encompasses exposure to contemporary findings in theory, and gaining experience in everyday psychiatric practice. The quality of psychiatric service rests primarily on knowledge, while technology, with its more significant role in somatic medicine, is of secondary importance. Knowledge is the foundation of mental health service provision. This underlines the significance of education in clinical psychopharmacology as the only way of transmission from centres of scientific discovery and breakthrough in providing psychiatric service to those that follow their lead. Transfer of knowledge ranges from relatively cheap approaches through reading textbooks and periodicals, to participating in professional gatherings on various levels, as well as through study visits and fellowships.

Given the needs and interests of mental health professionals, as well as of the users of their services, there is constant need to improve and enhance the modes of education in clinical psychopharmacology, which so far does not seem to adequately meet those needs.

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