ESTIMATES OF THE ANNUAL TOTAL NUMBER OF TITLES ON MEDICINE AND ITS DISCIPLINES AND SCIENTIFIC PRODUCTIVITY OF PHYSICIANS

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Two scientometric indices are reviewed: number of printed scientific works per 100 specialists per year and number of scientific journals per 1000 specialists. In 1973-1977 Brazilian chemists and pharmacologists published 15.8 scientific works per 100 specialists per year, in 1981-1985 Japanese physicians - 17.1 ones, in 1968-1986 Czechoslovakian physicians - 17.1 ones, in 1978-1986 Hungarian physicians - 18.3 ones, in 1963-1979 Polish physicians - 18.5 ones, in 1983 Yugoslavian physicians - 20.1 titles per 100 specialists. In 1986 in USA 7.2 biomedical journals were issued per 1000 physicians, in Japan - 3.4 ones, in Spain - 1.8 biomedical journals per 1000 physicians. In 1986 in USA 6.8 dental periodicals were published per 1000 dentists, Great Britain - 3.0 ones, in Canada - 2.6 ones, in Spain - 2.0 dental journals. The total number of world's biomedical articles and books' titles was 535,000 in 1967, 628,000 in 1972, 820,000 in 1978, 1.01 million ones in 1983 and 1.13 million titles in 1986.

Introduction

Number of world's biomedical serial is rapidly increasing. In 1962 it amounted to 14,000 titles, in 1972 - 19,000 ones, in 1978 - 23,700 titles. It was estimated that the number of periodical articles on medicine was 0.5 million titles in 1970. The main method of estimating the total number of printed scientific works on medicine is to multiply the total number of world’s biomedical serials by an average number of citations selected from periodicals listed in main bibliographic and abstract services and to calculate the percentage of books in the total number of medical titles in the indices of the National Library of Medicine (NLM) /Index Medicus and NLM Current Catalog/. In 1960-1972 Index Medicus listed, at an average, 2508 biomedical serials and selected from 74.6 articles per journal per year, in 1960-1978 - 2473 serials and 78.1 papers respectively, in 1960-1983 - 2507 serials and 81.5 articles respectively. Nevertheless, estimates of total number of articles in biomedical serial and books published in 1972, 1978 and 1983 based on the
Data (1.5, 2.0 and 2.4 million titles respectively\textsuperscript{6-8}) are obviously over-estimated because both \textit{Index Medicus} and many other bibliographic and abstract services list the most reputable journals publishing a lot of articles per year while the vast majority of biomedical serial consists of small periodicals, annuals and other serial including rather few papers per year.

For estimating the total number of world's biomedical titles and calculation of an index of scientific productivity of specialists it is important to know the percentage of books, booklets and dissertations in the total number of printed scientific works so as periodical articles are usually covered in national medical bibliography while, sometimes, books are not covered. In 1965–1986 \textit{Cumulated Index Medicus}, \textit{NLM Current Catalog} and \textit{Index to Dental Literature} contained 5,785,375 titles including 339,937 citations to books, booklets and dissertations – 5.9% or about 6.0% of all titles. The figure is taken for our calculations.

Recently a quite other way of estimating the annual total number of world's printed scientific works appeared: on the indices of average scientific productivity of physicians of all specialities (physicians, dentists and pharmacists) at calculation per 100 specialists per year.\textsuperscript{7} The aim of the article is to calculate indices of scientific productivity of physicians in different countries and an average index of scientific productivity of physicians, to calculate total number of physicians, dentists and pharmacists in 1967, 1972, 1978, 1983 and 1986 and according to the data to estimate the total number of biomedical articles and books' titles for the above-mentioned years as well as to receive estimates of number of articles and books' titles on different medical disciplines in 1986 in accordance with the distribution of abstracts and citations in \textit{Excerpta Medica} abstract journals in 1969–1986 on medical fields and that of other biomedical abstract services.

\textbf{Material and methods}

Statistical data of \textit{World Health Statistics Annuals} for 1960–1983 about number of physicians, dentists and pharmacists in 204 countries and territories were analysed. When the corresponding data were absent, number of physicians, dentists and pharmacists in a country for a given year was calculated on an annual increase of the specialists for previous years. Because the data of \textit{World Health Statistics Annuals} on medical personnel ended in 1978–1981, the data for 1983 and 1986 were calculated on an average increase of physicians in a country for previous years. Moreover, data about number of physicians, dentists and pharmacists in statistical annuals of different countries (including data for 1984 and even 1985) were used.