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HEALTH PSYCHOLOGY: BIBLIOMETRICAL RESULTS ON THE EMERGENCE AND RAPID CONSOLIDATION OF A NEW FIELD OF RESEARCH AND APPLICATION

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Presents bibliometrical research results on the history of health psychological publications. With reference to psychological literature databases, the emergence of health psychological publications in international psychology (database PsycLit) as well as in the German-speaking countries (database PSYINDEX) was analyzed. The topics included the relevant index terms (e.g., "health care psychology", "health behavior", "health education"). Besides results on the first occurrence and the annual frequencies of those terms between 1970 and 1995 in the databases, bibliometrical comparisons were conducted with reference to other psychological subdisciplines and to the relative proportions of empirical and experimental studies, case and experience reports, as well as overviews and textbooks in health psychological publications. The results point to (1) a rather sudden emergence of health psychological publications in the mid-eighties (with only some weak forerunners), (2) the rapid consolidation of the number of health psychological publications on a relative high level within a few years, (3) the relative supremacy of literature overviews and textbooks in comparison to empirical research reports in health psychology, and (4) a good agreement between German-language and international publication trends. These results point to the necessity of further promotion of genuine empirical research in health psychology to assure its long-term consolidation as well as to prevent its medium-term devaluation and debasement as being not more than a brief main stream topic in psychology and health politics.

KEY WORDS: Health psychology, bibliometry, history of psychology, professional specialization, health attitudes, health behavior, health care psychology, health education, health promotion, historical study.

Health psychology is, along with others, one of the younger subdisciplines of psychology. It is – like others (e.g., environmental psychology) – characterized both by basic psychological research as well as psychological applications, both of which are carried out interdisciplinarily or – at best – transdisciplinarily. In the past two or three decades, much significant research was done in health psychology referring to various sophisticated models of health behavior (see, e.g., Kirscht, 1988; Mullen, Hershey and Iverson, 1987; Schmidt, Schwenkmezger, Weinman and Maes, 1990; Schwarzer, 1996; Wallston and Wallston, 1984) and theories of salutogenesis (see, e.g., Antonovsky, 1979; 1987; Becker, 1992) which resulted in differentiated and effective approaches for health education and health promotion (see, e.g., Dignan and Carr, 1987; Green, Kreuter, Deeds and Partridge, 1980; Kolbe, 1988; Krampen, 1996). Of course, there are some historical forerunners of such health psychological work: Early solitary contributions can be cited (e.g., Alexander, 1939; Hellpach, 1907; Winslow, 1920; for an overview, see, Dlugosch and Schmidt, 1992). However, especially preventive medical and psychological contributions

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and the work of community (mental) health services must be named, on which modern health psychological theories and applications fall back as well as on theories and results from – for the most – the fields of social psychology, developmental psychology, action theory, personality psychology, and educational psychology.

The emergence of the new professional specialization “health psychology” was promoted by health political demands (especially the 1986 Ottawa Charta of the World Health Organization [WHO] and national health policy making and laws) and interdisciplinary demands (from cooperations of physicians, psychologists, sociologists, and economists) pointing at the individual, social, and economic superiority of prevention in comparison to the corrective treatment of disorders, as well as at the surplus value of (mental) health in comparison to absence of illness. Last but not least, the significant influences of public demands on the emergence of preventive programs and health education programs should not be forgotten. In addition, Schwenkmezger and Schmidt (1994) adduce the factors of decreasing relevance of infectious diseases in our century in favor of chronic-degenerative disorders partly caused by unhealthy life styles as well as the increasing costs of a purely corrective oriented medical treatment: All of these factors have contributed on their own and in their interactions to the emergence of the new sub-discipline of health psychology.

Historically such developments occurred similarly in (nowadays “older”) psychological subdisciplines like forensic psychology, marketing psychology, political psychology, etc. However, it should be mentioned that some of those older subdisciplines – sharing the basic research and application orientations of health psychology – are playing (after an initial big start) a rather minor or medium range role in psychological research and applications. This may be considered a warning sign for health psychology, too. Therefore, the following bibliometrical analyses not only have the objective to describe post hoc the emergence and development of health psychological publications, but also to look for hints pointing at those dangers of debasement for health psychology in the future. This is done with reference to a special methodology of historiography in sciences which was made possible and promoted by computer applications to the documentation of scientific literature. Quantitative bibliometrical methods are used to analyze (a) the rather short history of health psychological publications and publication trends as well as (b) the state of the art of health psychology publications with reference to their main topics and kind of publications (publication genre) in comparison with another newer subdiscipline (exemplarily selected is environmental psychology). In addition, (c) most of these analyses are conducted not only for international psychological literature, but also for that of German-speaking countries in order to examine the differences and common features of health psychological publication trends in international (for the most part Anglo-American) and European psychology (exemplarily for those in the German-speaking countries).

METHODS

Quantitative bibliometry was applied to two computer databases. The first refers to “PsycLit”, the computer database of the *Psychological Abstracts* (published by the American Psychological Association [APA]), in which international psychological literature (journal articles, monographs, edited books, and book chapters) with a strong focus on Anglo-American publications is documented. The second refers to “PSYINDEX”, the computer database of the *Psychologischer Index* (published by The German Center for

Documentation and Information in Psychology [ZPID] at the University of Trier/Germany), in which the psychological literature of the German-speaking countries is documented (journal articles, monographs, edited books, and book chapters in German and other languages published by German-speaking authors). The overlap between PsycLit and PSYINDEX in general does not exceed 4% of PsycLit, respectively, 18% of PSYINDEX (see Krampen and Wiesenhütter, 1993). Both databases are publicly available as CD-ROM and online and are bibliographic databases with references to primary literature. The same "Thesaurus of Psychological Index Terms" (Walker, 1994) and classification categories (distinguishing between the – of course partially overlapping – research areas of health psychology, psychosomatics, and behavioural medicine) are used in these two databases of psychological literature. Therefore, direct comparisons between PsycLit and PSYINDEX are possible (which are not possible with reference to the database Medline, which was therefore not included in the following analyses).

The *time period* under analysis is 1970–1995, (a) because the first health psychological as well as the first environmental psychological index terms were added to the *Thesaurus of Psychological Index Terms* (Walker, 1994) in 1973 (i.e., "health education", "environmental effects", and "environmental stress"), but there may be some index term forerunners in the years before (this was checked for the major and minor descriptors with positive results for PsycLit back until 1967); and (b) because it can be assumed that documentation is complete for 1995 in spite of the time-lag between originals' publications and their documentation in the databases. Bibliometrical analyses were conducted in December, 1996, using all PsycLit- and PSYINDEX-documents, i.e., including journal articles, monographs, edited books, and book chapters. It must be noted, however, that, although PSYINDEX started in 1977, it includes documentations of original publications since 1975.

Health psychological *index terms* (searched for in the major and minor descriptor fields of the PsycLit- and PSYINDEX-documents) that were used in all of the bibliometrical analyses reported are:

- "health education" (added to the Thesaurus in 1973, first document recorded in 1972 in PsycLit and 1977 in PSYINDEX),
- "health behavior" (added in 1982; PsycLit: 1979, PSYINDEX: 1978),
- "health attitudes" (added in 1985; PsycLit: 1982, PSYINDEX: 1978),
- "health care psychology" (added in 1985; PsycLit: 1981, PSYINDEX: 1982), and
- "health promotion" (added in 1991; PsycLit: 1980, PSYINDEX: 1978).

These five health psychological index terms were summarized as indicators of publications representing health psychology. They are the most clearly defined health psychological index terms of the *Thesaurus of Psychological Index Terms* (Walker, 1994). Because this is not true for all of their subdivisions (i.e., narrower index terms), the subdivisions of these health psychological index terms were not included in the analyses. With comparative objectives, analogous bibliometrical analyses were done for seven environmental psychological index terms (i.e., environmental attitudes, environmental effects, environmental planning, environmental psychology, environmental stress, ecological psychology, and conservation [ecological behavior]) representing publications concerning environmental psychology. Interrater reliability of "index terms" (i.e., the agreement regarding categorizations of documents) was tested for a random sample of 50 PSYINDEX and 50 PsycLit documents (Cohen's Kappa = 0.81 for PSYINDEX, Cohen's Kappa = 0.79 for PsycLit).

In addition to these index terms and their aggregation, the “*Kind of Document*” category in the “Key Phrase” (KP) was considered in PSYINDEX analyses of all documents. This was omitted in PsycLit analyses because of the highly selective documentation of the kind of document in the Key Phrases in PsycLit (see below). Kinds of document analyzed refers to the following kinds of primary publications (i.e., literature genre):

- “empirical study(ies)” and “experimental study(ies)” (summarized as “empirical studies”),
- “case report(s)” and “experience report(s)” (summarized as “pre-empirical reports”)
- “introduction(s)”, “overview(s)”, “literature review(s)” and “textbook(s)” (summarized as “nonempirical overviews”)
- “professional criticism(s)” and “professional criticism reply(ies)”.

In PSYINDEX, 50% of all health psychological documents (indicated by the above named health psychological index terms) are classified for their literature genre (in PsycLit: 1%), and 60% of all environmental psychological documents (indicated by the above named environmental psychological index terms) are classified for their literature genre (in PsycLit: 2%). Interrater reliability of “Kind of Document” (i.e., the agreement regarding categorizations of the kind of primary publications) was tested for a random sample of 100 PSYINDEX documents (Cohen’s Kappa = 0.93).

RESULTS

Absolute Frequencies of Health Psychological Publications in Total Databases

In the time period (1970–1995) under study, 7492 PsycLit documents and 3106 PSYINDEX documents are categorized using one or more of the above named health psychology index terms (for comparison: environmental psychology index terms in PsycLit: 3693, in PSYINDEX: 1352). The first health psychological indexed document emerged in 1972 (PsycLit), respectively, 1977 (PSYINDEX). However, it must be noted that the number of 100 annual health psychological indexed publications was reached not earlier than 1982 (PsycLit), respectively, 1987 (PSYINDEX). After that, the annual publication number increased fourfold within a few years to more than 400 documents in 1986 (PsycLit), respectively, 1991 (PSYINDEX). In the years 1991 to 1995, health psychology publications reached an average number of 800 per annum (PsycLit), respectively, 450 per annum (PSYINDEX). Thereby, it should be again noted that the overlap between PsycLit and PSYINDEX in general does not exceed 4% of PsycLit, respectively, 18% of PSYINDEX (see Krampen and Wiesenhütter, 1993).

Relative Frequencies of Health Psychological Publications in Total Databases

The absolute (annual) frequencies of health psychological publications reported in the last section have a limited information value. They must be regarded in relation to the total number of publications documented in the databases to give information about the relative occurrence of health psychological documents in comparison to the publication output of psychology in total. The results of these computations are presented in Figure 1 (which shows – in addition – the year of inclusion of the relevant index terms to the thesaurus; see above).

The publication trends for health psychology shown in Figure 1 point markedly at a slow start of publication rates in the late 1970s and early 1980s (up to 1% of all documents

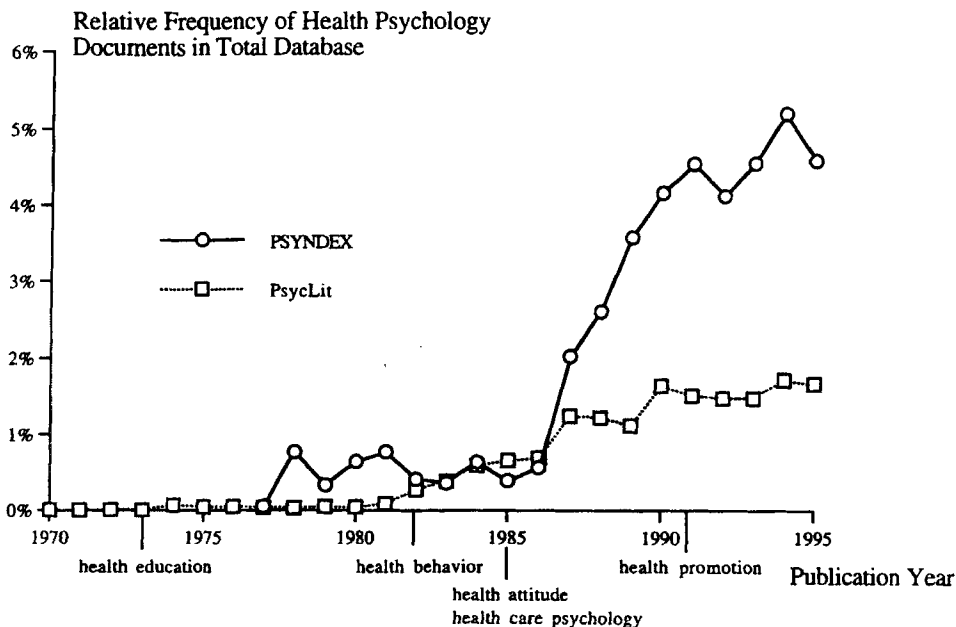


Figure 1 Relative frequencies of health psychological documents in PsycLit and PSYINDEX from 1970 to 1995 (showing the year of inclusion of index terms to the thesaurus; Walker, 1994).

in PSYINDEX and 0.5% of PsycLit) and at their explosion in the late 1980s and 1990s. Nowadays, about 5% of all psychological publications documented in PSYINDEX refer to health psychology. In the international database PsycLit, the proportion is about 2%, which is also a relatively high rate for a single – in addition, young – subdiscipline of psychology. Environmental psychology publications reach up to 0.4% in PsycLit and 1% in PSYINDEX. The current proportions of some other exemplarily selected well-established subdisciplines are, for comparison, 3% for personality psychology (both PsycLit and PSYINDEX), 6% (PsycLit) resp. 5% (PSYINDEX) for experimental psychology, 6% (PsycLit) resp. 4% (PSYINDEX) for developmental psychology, 2% for social psychology (both PsycLit and PSYINDEX), 22% (PsycLit) resp. 28% (PSYINDEX) for treatment and prevention, 9% (PsycLit) resp. 7% (PSYINDEX) for educational psychology (for other comparisons see, e.g., Krampen and Wiesenhütter, 1993).

Relative Frequencies of Index Terms within Health Psychology Publications

Publication trends for the five different index terms were analyzed for the time periods since the emergence of the first health psychological index term (PsycLit: 1972, PSYINDEX: 1977) within the total group of health psychology documents in the databases. The annual numbers of specific index term documents were related to the annual number of total health psychological documents. Figure 2 shows the results for the international literature (PsycLit), Figure 3 shows the results for the German-language publications (PSYINDEX).

Both database analyses show common features in the mid-term decrease of early health psychological index terms (i.e., “health education” and “health behavior”) in favor of

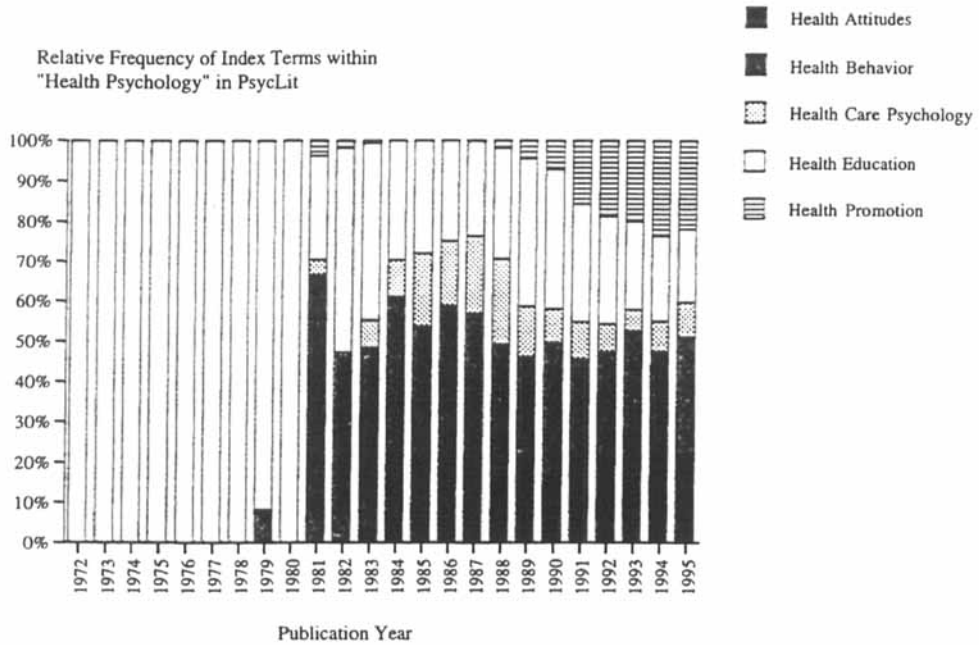


Figure 2 Relative frequencies of health psychological index terms within health psychology documents in PsycLit from their first occurrence in 1972 to 1995.

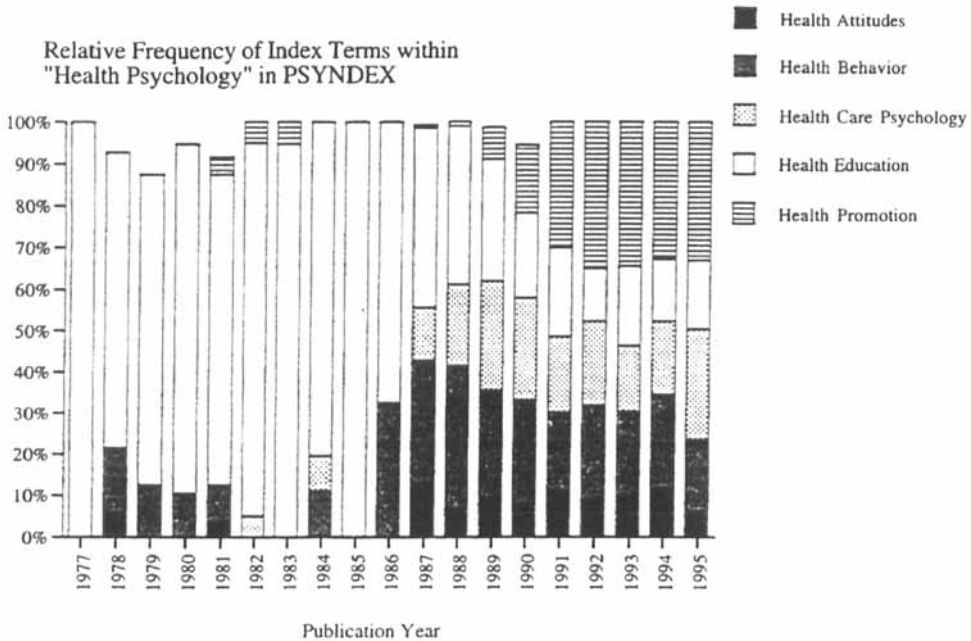


Figure 3 Relative frequencies of health psychological index terms within health psychology documents in PSYINDEX from their first occurrence in 1977 to 1995.

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significant increases of later added index terms like “health promotion” and “health attitudes”. An exception are the reverse publication trends of the index term “health care psychology” which decreased in PsycLit and increased in PSYINDEX during the last six to eight years. The current “hitparade” of health psychological index terms in the databases refers to “health promotion” (PsycLit: 23%, PSYINDEX: 33%-upward trend), “health attitudes” (23%/8%-upward trend), “health behavior” (29%/15%-downward trend), and “health education” (17%/17%-downward trend). Altogether, the results represent very well the differentiation in the documentation of a younger subdiscipline’s publications by the emergence and addition of new index terms to the thesaurus (Walker, 1994). Roughly outlined index terms were differentiated in interaction with the development and growth of health psychology in favor of more specific descriptors. However, the number of these more specific index terms for health psychology publications remains relatively small until now – in comparison to other subdisciplines (e.g., environmental psychology, see above). Therefore, it makes sense to demand a better, more differentiated documentation of health psychological publications in the databases.

Relative Frequencies of “Kind of Document” (Literature Genre) Within Health Psychology: The Question of its Empirical Foundation

Because of the above described highly selective documentation of publications for their “Kind of Document” (i.e., genre of primary publications) in the “Key Phrase” in PsycLit, the following bibliometrical analyses must be limited to PSYINDEX, the German-speaking countries’ psychological publications. Figure 4 presents the results on the proportions of health psychological publications documented in PSYINDEX and classified in its Key Phrase as empirical/experimental studies, case/experience reports, and

Health Psychology Documents
in PSYINDEX (1977-1996)

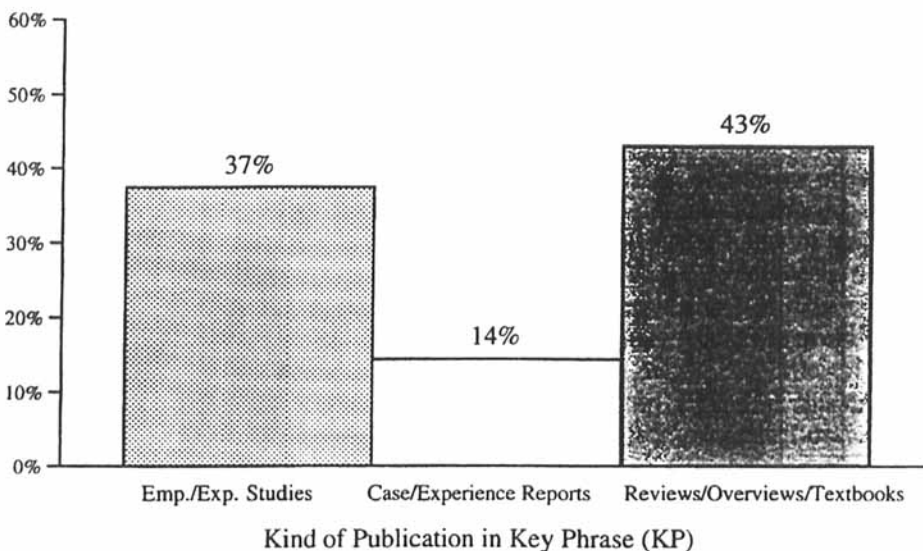


Figure 4 Kind of publication in key phrase of health psychological documents in PSYINDEX.

reviews/over-views/textbooks. For comparison, the rates for the same categories for environmental psychological publications are shown in Figure 5.

Results illustrated in Figures 4 and 5 point at – in comparison to environmental psychology – the relatively weaker foundation (quantitatively) of health psychology in empirical studies with larger samples and at higher rates of pre-empirical case and experience reports as well as nonempirical introductory texts and literature overviews. Controlled experimental studies constitute only 1% of all health psychological publications documented (environmental psychology: 6%), empirical studies with larger samples constitute 36% (environmental psychology: 51%), case reports constitute 2% (environmental psychology: 0%), and experience reports constitute 12% (environmental psychology: 5%). These empirical deficits of health psychology publications – at least in German-speaking countries – are compensated by a relatively large proportion of introductory and overview texts (43%) that leads to the question of their empirical foundation or – at best – empirical redundancy.

In addition, the small proportion (1%) of professional criticisms and professional criticism replies in health psychology is of interest. However, the rate of such discursive publications in environmental psychology is admittedly twice as frequent, but also rather low (2%). Higher rates occur only in older, well-established subdisciplines like forensic psychology (7%), personality psychology (6%), psychometrics (5%), and experimental psychology (4%) as well as in publications on a priori more discursive topics of psychology such as the humanities and art psychology (15%), history and systems of psychology (14%), and professional personnel and professional issues (10%). Thus, the relatively low rate of professional criticisms and replies in health psychology may be a common feature of new, younger subdisciplines still in conceptual development and growth thereby leaving not enough motivation and time for more discursive contributions (which could be an internally set protective factor against debasement and external criticisms for this young field).

Environmental Psychology
Documents in PSYNDEX (1977-1996)

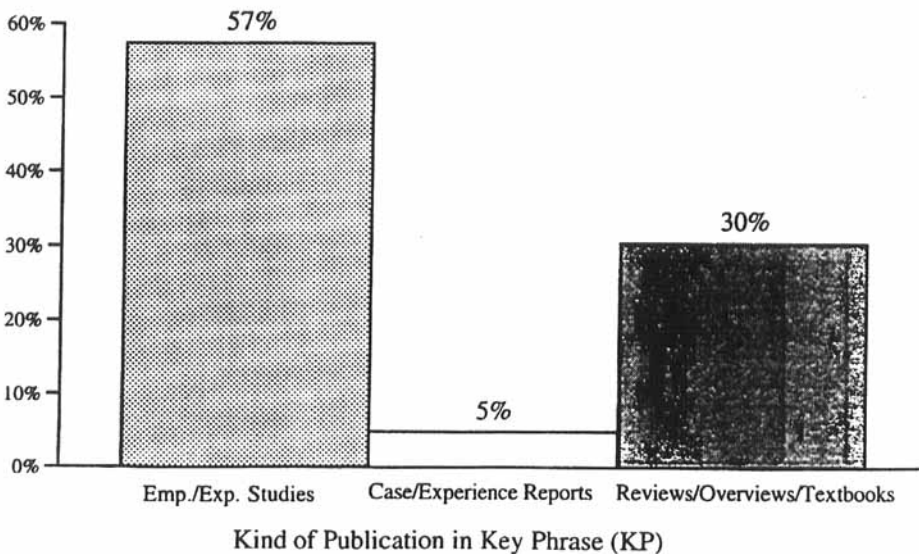


Figure 5 Kind of publication in key phrase of environmental psychology documents in PSYNDEX.

DISCUSSION

The quantitative bibliometrical results that are presented empirically confirm existing descriptions of the development of health psychology that, up until now, were founded to a large extent on impressions and selective, not database-based, literature overviews (e.g., Dlugosch and Schmidt, 1992; Schwenkmezger and Schmidt, 1994). Analyses of psychological literature documented in databases point to a rather sudden emergence of health psychological publications in the mid-1980s (with only some weak forerunners) and its rapid expansion within a few years in the late 1980s and 1990s. These trends in international and German-speaking countries' psychological publications quickly stabilized testifying to a rather rapid consolidation on a high level of literature production. Nowadays, health psychology publications comprise about 5% of psychological literature in the German-speaking countries (i.e., about 450 new publications per annum) and about 2% of the new international psychological publications (i.e., about 800 new publications per annum) indexed in the two psychological databases. Both proportions are high for a single, young subdiscipline of psychology. In fact, this is true even in comparison to some other well-established subdisciplines like personality psychology and social psychology with current literature output proportions of about 2% to 3%. Following this, most of the bibliometrical results on publication trends in health psychology that are presented are in good agreement for international literature and for that of German-speaking countries. It should be noted, however, that health psychology is somewhat more prominent in German-speaking countries because the results indicate a higher proportion of health psychological publications in German-speaking countries in comparison to international literature. Of course it must be noted, also, that some of the new journals in the area of health psychology are not yet indexed in the databases. Therefore, the absolute numbers of health psychological publications per annum that are reported underestimate to some degree the real numbers of health psychological publications in international as well as German-speaking countries' literature output.

Nevertheless, it should be considered that sudden emergence of and publication booms in a subdiscipline are sometimes combined with "sudden death" or its speedy drop to middle range (remember, e.g., the boom and decline of creativity research in the 1960s). For the last five years, at least, the continuous consolidation of health psychological publication rates may be or may become a protective factor against this danger. Yet, we must consider that – in comparison with other subdisciplines (e.g., environmental psychology) – health psychological publications are characterized by a relative supremacy of literature overviews, introductory texts, and textbooks over genuine empirical research reports (at least in the German-speaking countries). Here lies danger for the future of health psychology: We are in need of more methodologically well-founded genuine empirical and experimental research in health psychology to avoid its devaluation and debasement in health politics, public opinion, and the sciences as well. Another strategy to avoid this can be the promotion of more discursive contributions: Up until now, the proportion of professional criticisms and replies is rather low in health psychology. Of course, this may be a common feature of new, younger subdisciplines that are still in conceptual development and growth leaving not enough motivation and time for more discursive contributions. However, discursive and (self-)critical contributions may be an internally set protection factor against debasement and external criticisms (in analogy to vaccinations) strengthening the future of health psychological applications and research (e.g., against current pressures resulting from health-political economy measures).

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