A Bibliometric Analysis of the One Hundred Most Cited Studies in Psychosomatic Research

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The bibliometric method is mainly composed of citation analysis, which is the source of impact factors. Papers with a high number of citations are considered central in research. Therefore, top and highly cited papers provide evidence and information about research trends and scientific progress in a specific field. To the best of our knowledge, no studies have been published on the 100 most cited studies in psychosomatics, a wide interdisciplinary field that is concerned with the interaction of biological, psychological, and social factors in regulation of the balance between health and disease.

The present work aimed to identify and characterize the 100 most cited studies in psychosomatic research. A bibliometric design was used. On January 21, 2021, the Web of Science Core Collection database was searched for relevant studies in psychosomatics using “psychosomatic” as the keyword. Full texts and abstracts were screened by the authors independently to find the top cited articles in psychosomatics. Only studies with the term “psychosomatic” in the title were included. The authors extracted the data from the selected 100 most cited articles, which were exported into Microsoft Excel 2019 and HistCite™ for Windows. Any disagreement was resolved

by discussion. The 100 most cited studies were selected based on the number of citations (Table 1).

The 100 most cited studies were published in 53 different journals (5,065 cited references) and conducted by 245 authors, with an overall 15,691 global citations. *Psychosomatic Medicine* was the leading journal, with 25 published studies, followed by *Psychotherapy and Psychosomatics* ($n = 8$, GCS = 1,088). Of the included studies, 82% were published as research articles while 11% were published as review articles. The USA was the top-ranked country, with 37% of the studies cited 6,069 times. The most productive institute in psychosomatics was Harvard University, which published 5% of the studies with 867 citations. The most prolific authors were Z.J. Lipowski ($n = 5$; 785 citations), J.W. Pennebaker ($n = 3$; 789 citations), and G.A. Fava ($n = 3$; 456 citations). The most cited study was “Psychosomatic Disease and the Visceral Brain: Recent Developments Bearing on the Papez Theory of Emotion.” It was authored by P.D. Maclean, published in 1949 in the *Journal of Psychosomatic Medicine*, and cited 738 times. The largest number of studies was published in English and developed countries.

Table 1. The 100 most cited studies on psychosomatics

Rank	Title	Journal	Total citations	Publication year	First author
1	Psychosomatic disease and the visceral brain: recent developments bearing on the Papez theory of emotion	Psychosom Med	738	1949	Maclean
2	Conceptual model of psychosomatic illness in children: family organization and family therapy	Arch Gen Psychiatry	543	1975	Minuchin
3	Hostility and health: current status of a psychosomatic hypothesis	Health Psychol	500	1992	Smith
4	Development of the Perceived Stress Questionnaire: a new tool for psychosomatic research	J Psychosom Res	465	1993	Levenstein
5	The alexithymia construct: a potential paradigm for psychosomatic medicine	Psychosomatics	436	1991	Taylor
6	Association between bullying and psychosomatic problems: a meta-analysis	Pediatrics	419	2009	Gini
7	Psychosomatics and psychopathology: looking up and down from the brain	Psychoneuroendocrinology	336	2005	Thayer
8	The psychosomatic concept of obesity	J Nerv Ment Dis	284	1957	Kaplan
9	Interoception: the inside story – a model for psychosomatic processes	Psychosom Med	275	2001	Cameron
10	Attachment and psychosomatic medicine: developmental contributions to stress and disease	Psychosom Med	273	2001	Maunder
11	Disclosure of traumas and psychosomatic processes	Soc Sci Med	263	1988	Pennebaker
12	Diagnostic criteria for use in psychosomatic research	Psychother Psychosom	263	1995	Fava
13	On measuring mindfulness in psychosomatic and psychological research	J Psychosom Res	261	2008	Grossman
14	The psychophysiology of confession: linking inhibitory and psychosomatic processes	J Pers Soc Psychol	260	1987	Pennebaker
15	Review of consultation psychiatry and psychosomatic medicine. 2. Clinical aspects	Psychosom Med	249	1967	Lipowski
16	The infantile personality: the core problem of psychosomatic medicine	Psychosom Med	240	1948	Ruesch
17	Bullying behavior and associations with psychosomatic complaints and depression in victims	J Pediatr	233	2004	Fekkes
18	Psychoneuroimmunology and psychosomatic medicine: back to the future	Psychosom Med	224	2002	Kiecolt-Glaser
19	Psychosomatic illness: problem in communication	Psychother Psychosom	209	1970	Nemiah
20	The Zurich study: a prospective epidemiological study of depressive, neurotic and psychosomatic syndromes. 1. Problem, methodology	Eur Arch Psychiatry Clin Neurosci	208	1984	Angst
21	Relationships between exposure to bullying at work and psychological and psychosomatic health complaints: the role of state negative affectivity and generalized self-efficacy	Scand J Psychol	205	2002	Mikkelsen
22	Detecting panic disorder in medical and psychosomatic outpatients: comparative validation of the Hospital Anxiety and Depression Scale, the Patient Health Questionnaire, a screening question, and physicians' diagnosis	J Psychosom Res	190	2003	Lowe
23	Striving for unwanted goals: stress-dependent discrepancies between explicit and implicit achievement motives reduce subjective well-being and increase psychosomatic symptoms	J Pers Soc Psychol	187	2005	Baumann
24	Psychosomatic medicine in 70s: overview	Am J Psychiatry	184	1977	Lipowski
25	The psychophysiology of confession: linking inhibitory and psychosomatic processes	J Pers Soc Psychol	184	2006	Enders
26	Psychosocial and psychosomatic diagnoses in primary care of children	Pediatrics	182	1980	Starfield
27	Stress at work and psychosomatic complaints: a causal interpretation	J Appl Psychol	177	1985	Frese
28	Bullied children and psychosomatic problems: a meta-analysis	Pediatrics	171	2013	Gini

Table 1 (continued)

Rank	Title	Journal	Total citations	Publication year	First author
29	Problematic internet use in Chinese adolescents and its relation to psychosomatic symptoms and life satisfaction	BMC Public Health	166	2011	Cao
30	Traumatic experience and psychosomatic disease: exploring the roles of behavioral inhibition, obsession, and confiding	Can Psychol	166	1985	Pennebaker
31	Review of consultation psychiatry and psychosomatic medicine. 1. General principles	Psychosom Med	163	1967	Lipowski
32	Sympathetic nervous system activation in essential hypertension, cardiac failure and psychosomatic heart disease	J Cardiovasc Pharmacol	159	2000	Esler
33	Phenomenon of alexithymia: observations in neurotic and psychosomatic patients	Psychother Psychosom	155	1977	Sifneos
34	Psychosomatic subjects and the duty to be well: personal agency within medical rationality	Econ Soc	152	1993	Greco
35	Anorexia nervosa: a psychosomatic entity	Psychosom Med	148	1940	Waller
36	Neuropeptides and their receptors: a psychosomatic network	J Immunol	141	1985	Pert
37	Trends in ambulatory self-report: the role of momentary experience in psychosomatic medicine	Psychosom Med	139	2012	Conner
38	Presidential address 1974: from explanation to action in psychosomatic-medicine – case of obesity	Psychosom Med	136	1975	Stunkard
39	Double exposure: the combined impact of the home and work environments on psychosomatic strain in Swedish women and men	Int J Health Serv	136	1992	Hall
40	Gender, coping and psychosomatic symptoms	Psychol Med	130	1990	Vingerhoets
41	Psychometric properties of the SUNYA revision of the Psychosomatic Symptom Checklist	J Behav Med	128	1994	Attanasio
42	Neural substrates of implicit and explicit emotional processes: a unifying framework for psychosomatic medicine	Psychosom Med	126	2008	Lanes
43	Emotional awareness deficits in inpatients of a psychosomatic ward: a comparison of 2 different measures of alexithymia	Psychosom Med	125	2005	Subic-Wrana
44	Psychosomatic concepts in dermatology – a dermatologist-psychoanalyst's view point	Arch Dermatol	122	1983	Koblenzer
45	Childhood asthma: a psychosomatic disorder – some epidemiological considerations	Br J Prev Soc Med	120	1967	Graham
46	Illness perceptions: a new paradigm for psychosomatics?	J Psychosom Res	118	1997	Weinman
47	Differential economic stability and psychosocial stress at work: associations with psychosomatic complaints and absenteeism	Soc Sci Med	118	2004	Godin
48	Psychosomatic disorders and neurosis in out-patients attending a general hospital	J Psychosom Res	117	1960	Sainsbury
49	School stressors, psychological complaints and psychosomatic pain	Acta Paediatr	117	2008	Hjern
50	Review of consultation psychiatry and psychosomatic medicine. 3. Theoretical issues	Psychosom Med	115	1968	Lipowski
51	The Zurich study: a prospective epidemiological study of depressive, neurotic and psychosomatic syndromes. 4. Recurrent and nonrecurrent brief depression	Eur Arch Psychiatry Clin Neurosci	115	1985	Angst
52	Relationship of job stress and type-A behavior to employee's job satisfaction, organizational commitment, psychosomatic health problems, and turnover motivation	Hum Relat	115	1990	Jamal
53	Salivary chromogranin A as an index of psychosomatic stress response	Biomed Res (Tokyo)	115	1998	Nakane

Table 1 (continued)

Rank	Title	Journal	Total citations	Publication year	First author
54	Correlation between burnout syndrome and psychological and psychosomatic symptoms among teachers	Int Arch Occup Environ Health	113	2006	Bauer
55	Objective assessment of unstable bladder of psychosomatic origin	Br J Urol	112	1978	Frewen
56	A psychosomatic study of pelvic congestion	Am J Obstet Gynecol	110	1952	Duncan
57	Psychosomatic cofactors and psychiatric comorbidity in patients with chronic itch	Clin Exp Dermatol	109	2006	Schneider
58	Comparing preference-based quality-of-life measures: results from rehabilitation patients with musculoskeletal, cardiovascular, or psychosomatic disorders	Qual Life Res	108	2008	Moock
59	Inflammatory and oxidative and nitrosative stress pathways underpinning chronic fatigue, somatization and psychosomatic symptoms	Curr Opin Psychiatry	107	2009	Maes
60	A psychosomatic survey of cancer of the breast	Psychosom Med	105	1952	Bacon
61	The psychosomatic implications of the primary unit: mother-child	Am J Orthopsychiatry	104	1949	Benedek
62	Psychosomatic medicine: emerging trends and perspectives	Psychother Psychosom	102	2000	Fava
63	A study of the effectiveness of 2 group behavioral medicine interventions for patients with psychosomatic complaints	Behav Med	101	1990	Hellman
64	Psychosomatic syndromes, somatization and somatoform disorders	Psychother Psychosom	100	1994	Kellner
65	Applying mixed regression models to the analysis of repeated-measures data in psychosomatic medicine	Psychosom Med	100	2006	Blackwell
66	Procedural injustice at work, justice sensitivity, job satisfaction and psychosomatic well-being	Eur J Soc Psychol	98	1999	Schmitt
67	The covariation of common psychosomatic symptoms among children from socio-economically differing residential areas: an epidemiologic-study	Acta Paediatr	94	1993	Alfven
68	Fundamental concepts of psychosomatic research psychogenesis, conversion, specificity	Psychosom Med	93	1997	Alexander
69	Impact of ethnicity, violence and acculturation on displaced migrants: psychological distress and psychosomatic complaints among refugees in Sweden	J Nerv Ment Dis	93	2000	Sundquist
70	Learning to have psychosomatic complaints: conditioning of respiratory behavior and somatic complaints in psychosomatic patients	Psychosom Med	91	1943	Vandenbergh
71	Current psychosomatic practice	Psychother Psychosom	91	2007	Fava
72	Psychosomatic manifestations of rapport in psychotherapy	Psychosom Med	90	1966	Charny
73	Hypnosis, suggestions, and psychosomatic phenomena: new look from standpoint of recent experimental studies	Am J Clin Hypn	90	1989	Barber
74	Beyond the psychosomatic family: a biobehavioral family model of pediatric illness	Fam Process	90	1993	Wood
75	Psychosomatic musculoskeletal pain in childhood: clinical and psychological analyses of 100 children	Pediatrics	89	1991	Sherry
76	Implementation and interpretation of respiratory sinus arrhythmia measures in psychosomatic medicine: practice against better evidence?	Psychosom Med	89	2006	Ritz
77	Denial revisited: reflections on psychosomatic theory	Psychother Psychosom	88	1975	Nemiah
78	Evaluation of the German type D scale (DS14) and prevalence of the type D personality pattern in cardiological and psychosomatic patients and healthy subjects	Psychother Psych Med	88	2004	Grande
79	Physical training intervention in female shift workers. 1. The effects of intervention on fitness, fatigue, sleep, and psychosomatic symptoms	Ergonomics	87	1988	Harma

Table 1 (continued)

Rank	Title	Journal	Total citations	Publication year	First author
80	Neurobiology, cellular and molecular biology, and psychosomatic medicine	Psychosom Med	84	1994	Williams
81	Associations between bullying behaviour, psychosomatic complaints, emotional and behavioural problem	J Paediatr Child Health	84	2008	Gini
82	A psychosomatic study of maladie des tics (Gilles de la Tourette's disease)	Psychiatr Q	83	1943	Mahler
83	Some effects of anxiety level and food cues on eating behavior of obese and normal subjects: comparison of schachterian and psychosomatic conceptions	J Pers Soc Psychol	82	1972	Mckenna
84	Psychiatric effects of thyroid-hormone disturbance. 5. Psychosomatic illness review	Psychosomatics	82	1983	Hall
85	Psychosomatic and psychoimmunologic research	Psychosom Med	82	1980	Ader
86	School-related stress and psychosomatic symptoms among Norwegian adolescents	Sch Psychol Int	82	2004	Murberg
87	Anxiety, depression and psychosomatic symptoms in patients with atopic dermatitis: comparison with normal controls and among groups of different degrees of severity	J Dermatol Sci	81	1997	Hashiro
88	Transsexualism and transvestism as psychosomatic and somato-psychic syndromes	Am J Psychother	80	1954	Benjamin
89	Use of a diary technique to investigate psychosomatic relations in atopic-dermatitis	J Psychosom Res	80	1987	King
90	Use of the diagnostic criteria for psychosomatic research in oncology	Psychother Psychosom	80	2005	Grassi
91	The impact of timing of puberty on psychosomatic symptoms among 14-year-old to 16-year-old Finnish girls	Child Dev	79	1991	Aro
92	Redefining the psychosomatic family: family process of 26 eating disorder families	Int J Eat Disord	77	1994	Dare
93	Long-term illness and psychosomatic complaints in children aged 2–17 years in the 5 Nordic countries: comparison between 1984 and 1996	Eur J Public Health	77	2001	Berntsson
94	Psychosomatic study of 46 young men with coronary artery disease	Psychosom Med	74	1954	Miles
95	Psychosomatic self-regulation of migraine headaches	Semin Psychiatry	74	1973	Sargent
96	What does the word psychosomatic really mean: a historical and semantic inquiry	Psychosom Med	74	1984	Lipowski
97	School-related stress and psychosomatic symptoms among school adolescents	J Sch Health	74	1999	Natvig
98	Preliminary report on a psychosomatic study of rheumatoid arthritis	Psychosom Med	73	1947	Johnson
99	Psychophysiology of stress in dermatology: the psychobiologic pattern of psychosomatics	Dermatol Clin	73	1996	Panconesi
100	Interrater reliability, prevalence, and relation to, ICD-10 diagnoses of the diagnostic criteria for psychosomatic research in consultation-liaison psychiatry patients	Psychosomatics	73	2004	Galeazzi

The present results might help researchers to identify trends in psychosomatic research, targeted journals, specialized institutions, and highly qualified authors. However, they should be considered with caution since they were strongly influenced by the choice to include only

papers with the word “psychosomatic” in the title, which, for instance, excluded seminal papers in psychosomatics such as “The Need for a New Medical Model: a Challenge for Biomedicine” [Science. 1977; 196: 129–36] by G. Engel.

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Statement of Ethics

No human or animal subjects were involved in this study. Therefore, no ethical approval was required.

Conflict of Interest Statement

The authors have no conflict of interests to declare.

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