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Bibliometric Analysis of Research Studies Based on Federally Funded Children's Health Surveys

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Abstract

Objective: Bibliometric analyses are commonly used to measure the productivity of researchers or institutions but rarely used to assess the scientific contribution of national surveys/datasets. We applied bibliometric methods to quantify the contributions of the National Survey of Children's Health (NSCH) and the National Survey of Children with Special Health Care Needs (NS-CSHCN) to the body of pediatric health-related research. We also examined dissemination to nonresearch audiences by analyzing media coverage of statistics and research produced from the surveys.

Methods: We conducted a search of the Web of Science database to identify peer-reviewed articles related to the NSCH and NS-CSHCN published between 2002 and 2019. We summarized information about citation counts, publishing journals, key research areas, and institutions using the surveys. We used the Lexis Advance database Nexis to assess media coverage.

Results: The publication set included 716 NSCH/NS-CSHCN journal articles published between 2002 and June 2019. These publications have in turn been cited 22,449 times, including in 1614 review articles. Over 180 journals have published NSCH/NS-CSHCN articles, and the most commonly covered research areas are in pediatrics; public, environmental and occupational health;

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SUPPLEMENTARY DATA

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psychology; and health care sciences and services. Over 500 institutions have used NSCH/NS-CSHCN data to publish journal articles, and over 950 news media articles have cited statistics or research produced by the surveys.

Conclusions: NSCH/NS-CSHCN data are widely used by government, academic, and media institutions. Bibliometric methods provide a systematic approach to quantify and describe the contributions to the scientific literature made possible with these data.

Keywords

National Survey of Children's Health; National Survey of Children with Special Health Care Needs; bibliometrics; research Impact

The National Survey of Children's Health (NSCH) and the National Survey of Children with Special Health Care Needs (NS-CSHCN), both sponsored and directed by the Health Resources and Services Administration's Maternal and Child Health Bureau (HRSA MCHB), have provided important information for the field of pediatric health since 2001.[1–3] These unique surveys have produced national- and state-level data for children ages 0 to 17 years on key indicators of child health and well-being, including physical and mental health status, current conditions, and functional difficulties; access to and utilization of health care; parent/caregiver, family, and household factors; school readiness, school experiences, and extracurricular activities; neighborhood characteristics and community-based services; and sociodemographic factors. The surveys are closely linked with the state Title V Maternal and Child Health Block Grant Services Program,[4] serving as critical sources of data for needs assessments, program planning, and program monitoring. This includes providing the data for 20 national performance and outcome measures and sub-measures to support the program. In addition, the surveys inform the Healthy People initiative led by the United States (US) Department of Health and Human Services' Office of Disease Prevention and Health Promotion, providing benchmarking data on 15 national indicators of child health.[5] The surveys are also cited in publications from the National Academies of Sciences, Engineering, and Medicine.[6–9] The survey data files are publicly available and are used to support scientific research on diverse topics pertaining to pediatric health.[10] HRSA MCHB has also funded the Child and Adolescent Health Measurement Initiative to develop the Data Resource Center, a website which provides access to data from several national health surveys, including the NSCH and NS-CSHCN, in a user-friendly format for nonresearchers such as maternal and child health practitioners, policy makers, media representatives, and the general public.[11]

Between 2001 and 2012, the National Center for Health Statistics, part of the Centers for Disease Control and Prevention (CDC), conducted the NSCH and NS-CSHCN in collaboration with HRSA MCHB every 4 years on an alternating basis, using a random-digit-dial telephone frame and computer-assisted telephone interviews. Between 2012 and 2015, the surveys underwent a major redesign with several goals, including combining the 2 surveys into a single survey conducted on an annual basis, changing to an address-based sampling frame, employing self-administered questionnaires completed by parents/caregivers via web or mail, and better aligning the survey content with the revised Title V performance measurement system.[12,13] Content from previous surveys was combined and

streamlined into the current survey, and new content was added on emergent high-priority topics. The NSCH name was retained for the revised survey, and the NS-CSHCN name was retired. As of 2016, the redesigned NSCH is conducted annually by the US Census Bureau with direction and funding from HRSA MCHB. Detailed information about the survey methodologies is available elsewhere.[14–16]

Estimates based on data from the NSCH and the NS-CSHCN have been widely used to inform research, program, and policy. The repeated cross-sectional nature of the surveys has enabled time-series analyses to describe trends over time, with notable improvements in temporality since the redesign in 2016. Yet to date there have been no efforts to systematically document the scientific contribution of these surveys. Although basic web analytics can tabulate dataset downloads of the surveys' public use files, such analytics do not allow for tracking how the data are subsequently used. A more sophisticated examination of the role and influence of the surveys is needed to better understand what research topics are most frequently addressed and how public funds for the surveys are contributing to the scientific literature. Bibliometrics is a quantitative approach used to assess a defined body of scholarly work in order to understand and evaluate research influence.[17] This methodology has been used to measure the impact of a body of literature pertaining to a particular topic, as well as publication trends over time in clinical, public health, and social science fields.[18–27] While bibliometric methods have been widely used to assess the research productivity of a single author, research group, or institution, they can also be applied when the unit of analysis is a national survey. For example, Khalil and Crawford (2015) were the first to conduct a bibliometric analysis of a national health survey —the Behavioral Risk Factor Surveillance System (BRFSS)—to better understand how survey data were being used and identify resultant publication trends.[28]

The primary objective of the present study was to use bibliometric methods to assess the contribution of the NSCH and NS-CSHCN on the body of pediatric health-related research. Specifically, this study sought to examine the output over time of peer-reviewed publications that have used NSCH/NS-CSHCN data, the influence of these publications on subsequent research, the publishing journals, research topic areas, and institutions using the survey data for publications. A secondary objective was to explore the dissemination of NSCH/NS-CSHCN research to nonacademic audiences through analysis of media coverage referencing the surveys.

Methods

We analyzed publications from the NSCH and NS-CSHCN together, since the main study purpose was to assess the overall scientific contribution of HRSA MCHB's survey investments. The surveys' combination in 2016 further justified our analytic decision. For the bibliometric analysis, we used the Web of Science Core Collection, produced by Clarivate Analytics, to retrieve and analyze the set of publications that featured data from the NSCH or NS-CSHCN. We selected Web of Science as the primary data source because it includes data at the institution level, which enabled us to examine individual organizations' use of the NSCH/NS-CSHCN. In addition, we used InCites, also produced by Clarivate

Analytics, to retrieve citation counts and other citation impact data for each article in the publication set.

We developed a search string based on the full name of the surveys, name variations, and acronyms affiliated with the surveys (Appendix 1). Terms were searched across the title, abstract, and keywords fields. Duplicate results were removed. We identified NSCH or NS-CSHCN publications from the surveys' first public data release (2002) through June 2019. The publication dataset was comprised of research articles and reviews. We excluded other publication types (ie, meeting abstracts, proceedings papers, editorials, book chapters, corrections) since Web of Science does not include a comprehensive listing of these publication types. We also excluded publications ahead of print because publication details are incomplete and citation data are not yet available.

We examined several key bibliometric measures of interest, including metrics of scholarly output (total number of NSCH/NS-CSHCN publications), citation counts (total number of subsequent articles citing NSCH/NS-CSHCN publications, number of review articles citing NSCH/NS-CSHCN publications, mean citation count), and H-Index.[29] The H-Index has previously been used as an indicator of the broad impact and significance of a single investigator's cumulative research contributions. It corresponds to the number of publications (N) in a given dataset having N or more citations, in an attempt to simultaneously capture the quantity and quality of scientific output.[30] For the present study, we calculated the H-Index for the body of NSCH/NS-CSHCN publications rather than for a single researcher.

For the media coverage analysis, we searched the Lexis Advance database Nexis for news articles published between 2002 and August 2019, using the same set of terms employed for the bibliometric analysis and limiting the results to English language only (Appendix 2). Two study authors (L.A.L.-H., S.R.P.) agreed on a thematic template to identify key child health-related topic areas and specify inclusion/exclusion criteria. We included results if they described NSCH/NS-CSHCN studies or if they referenced statistics obtained from the NSCH/NS-CSHCN to provide context or background for a story. We included several in-scope publication types (eg, newspapers, web-based publications, magazines, and news media blogs), and excluded duplicate results and out-of-scope publication types (eg, government documents, international news media sources, professional/trade publications, press releases, opinion pieces, and personal/opinion blogs). The 2 coding authors applied this rubric to 2 subsets of results to ensure reliability of the coding instrument before allocating and independently coding the remaining results.

Results

We identified a total of 716 publications that used the NSCH and/or NS-CSHCN between 2002 and June 2019. Figure 1 shows the publication counts by year, and Table 1 provides some common bibliometric indicators calculated for the entire publication set. The original 716 articles using the NSCH/NS-CSHCN have in turn been cited a total of 22,449 times as of July 2020, including 1614 reviews which have cited NSCH/NS-CSHCN publications. The average citation count was 31.35 citations per publication. The H-Index for the publication

set was 74, indicating that 74 publications were cited at least 74 times.[30] Figure 2 shows the number of citations accumulated by the NSCH/NS-CSHCN publication set by year. Table 2 lists the top 20 cited papers from NSCH/NS-CSHCN articles published between 2002 and 2019. Over 180 distinct journals published articles that featured data from the NSCH or NS-CSHCN. Figure 3 shows the top 18 journals publishing articles using the NSCH/NS-CSHCN. Journals with the highest volume of publications include the *Maternal and Child Health Journal* (122 publications), *Pediatrics* (94 publications), and *Academic Pediatrics* (57 publications).

We also examined research areas covered by the NSCH/NS-CSHCN publications by examining the subject categories created and assigned by Web of Science to the journals in which the publications appeared. Figure 4 presents the top 15 research areas for NSCH/NS-CSHCN publications based on the journals' subject categories. A wide breadth of subject categories was evident, with the most common categories: pediatrics (n = 275 publications); public, environmental, and occupational health (n = 273); psychology (n = 81); and health care sciences and services (n = 78).

We also examined institutions that used the NSCH/NS-CSHCN to publish at least one article, and identified over 500 institutions including government agencies, universities, hospitals, and research institutes. Figure 5 depicts the top 22 organizations publishing NSCH/NS-CSHCN articles. The institutions with the most publications included the University of California System (n = 179), CDC (n = 142), HRSA (n = 92), University of North Carolina (n = 80), and Harvard University (n = 78).

In addition, we manually reviewed publication titles, abstracts, and/or full articles as needed to identify those articles which used multiple years of data. Out of the publication set of 716 articles, we identified a total of 80 articles which used more than 1 cycle of NSCH or NS-CSHCN data; 55 of these included multiple years of data in order to examine trends over time, while another 22 pooled data across multiple years in order to increase sample sizes of their populations of interest. The remaining articles included multiple survey years to either compare estimates across surveys or to answer different research questions.

For the news media coverage analysis, we initially retrieved 1867 results. After excluding out-of-scope results, we identified 958 news stories referencing the NSCH/NS-CSHCN. Table 3 summarizes news media coverage between 2002 and 2019, categorized by the most frequent child health-related topics. Table 4 lists selected news stories to illustrate the scope of media coverage related to the surveys.

Discussion

This bibliometric analysis demonstrates that NSCH/NS-CSHCN data are frequently used to publish pediatric health research on a wide range of topics. This is the first analysis to quantify the scientific usage and contribution of the surveys to the field of pediatric health. Over the course of approximately 17 years, from 2002 to mid-2019, research stemming from the NSCH/NS-CSHCN led to a total of 716 research articles published in peer-reviewed journals and 22,449 citations, demonstrating the surveys' contributions to scientific

knowledge in the area of children's health. To date, only one other bibliometric analysis of a federally funded health survey has been published.[28] In that study, Khalil and Crawford (2015) examined the BRFSS and identified 1278 articles published over the course of 28 years, from 1984 to 2012, leading to approximately 34,000 citations. However, direct comparisons between the NSCH/NS-CSHCN and the BRFSS are discouraged due to several differences between the surveys that impact the bibliometric analyses. Specifically, the BRFSS has been fielded annually since 1984, while the NSCH/NS-CSHCN were launched in 2001, and were conducted quadrennially (alternating every 2 years) until 2016 when the surveys were combined and administration was increased to an annual frequency. The BRFSS made 28 datasets available for analysis and publication during the time period examined by Khalil and Crawford, compared with 8 NSCH/NS-CSHCN datasets available at the time of this analysis. In addition, older articles produced using the BRFSS will naturally accrue increasing numbers of citations because they have been in the public domain for a longer period of time.

For the set of NSCH/NS-CSHCN publications in this analysis, the calculated H-Index was 74. It is difficult to put this metric into context since values vary between scientific disciplines, and are influenced by the number of investigators, publications, and citations in any given field. Original work to develop the H-Index, which was applied to the academic output of physicists, suggested that an H-index of 40 after 20 years of scientific activity would represent outstanding researchers found in top universities or research laboratories, and an H-Index of 60 after 20 years would indicate "truly unique" individuals.[30] In the biological and biomedical sciences, new inductees in the National Academy of Sciences were found to have an average score of 57. However, applying the H-Index to groups of scientists, rather than individuals, leads to a larger H-index than that of each group member.[30]

Further consideration of the 20 most cited papers suggests several reasons why these papers would be the most frequently cited, which point to the strengths of the NSCH and NS-CSHCN. First, they may be the only, or first, source of nationally representative data on that topic (ie, papers on autism, attention deficit hyperactivity disorder [ADHD], eczema, epilepsy, children with special health care needs). Second, due to both surveys being administered repeatedly over time, it was possible to examine trends, which may have drawn further attention to rising prevalence rates for certain topics, such as autism, ADHD, or children's mental health. Third, the NSCH/NS-CSHCN surveys include a variety of topics that cannot be examined with other datasets, thereby providing a richer, and unique, context for analysis. For example, the National Health and Nutrition Examination Survey provide national estimates on childhood obesity; however, the sample size is much smaller and does not cover a similar range of topics as the NSCH. The obesity studies on the most-cited list in Table 2 either examined a range of disparities or examined obesity in the context of other factors unique to the NSCH, such as children's mental health. Fourth, the surveys may be the only source of national data that captured the in-depth perspectives and frustrations of parents in accessing health services for their children, as reflected in the highly cited papers on autism, ADHD, medical home, and gaps in care for children with special health care needs. Taken together, these papers shed a light on new national data that was unavailable,

highlight the growing role of developmental and behavioral conditions in US children's health, and provide benchmarks for child health services research.

There are some study limitations to bear in mind. First, our bibliometric analysis only included articles that contained the survey names in the title, abstract, and keywords, thus may have undercounted the total number of articles if the survey names only appeared in the text. In addition, bibliometrics capture the quantity of research output and impact on subsequent research, but do not necessarily measure the quality of research output. For example, citation counts can include both positive and negative citations (meaning that if a downstream journal article cites a NSCH or NS-CSHCN study as an example of poor-quality research, it would still be counted as a citation without accounting for context). As well, citation counts may be inflated due to researcher self-citing; however, this practice is to be expected with regard to survey data collected on a regular basis, where researchers may refer to their own previous studies using older survey years to frame updated analyses using more recent data or extend previous lines of inquiry to new populations, conditions, or settings. Web of Science allows for accounting of self-citations in the calculation of bibliometrics, and we included citation counts both with and without self-citations. Furthermore, analysis of the most frequently cited articles is biased toward older articles which have had more time to accumulate citations. With respect to the news media analysis we conducted, news reports often leave out survey names and instead refer to "data from HRSA" or "data from CDC." As a result, our search strategy, which was limited to variations of the survey names, likely resulted in an underestimate of the number of survey-related news articles. Both the bibliometric analysis and media coverage analysis missed results not indexed in Web of Science or Lexis Advance database Nexis, respectively, thus the metrics presented here are likely undercounts. Analyses conducted using other databases, such as Scopus or GoogleScholar/GoogleNews, are likely to provide different results. Another limitation is that there are few options available for systematically measuring research impact beyond scholarly output. Alternative approaches to measuring research impact, called "altmetrics," have been developed to assess social or public engagement with research studies[31]; however, altmetrics can currently only be applied to individual journal articles and not to groups of articles, therefore, it was not possible to quantify the overall impact of the full set of NSCH/NS-CSHCN articles using this approach. Finally, measuring impacts such as changes in clinical practice, community benefit, and legislation/policy is a more complex and qualitative endeavor requiring review of the government reports and other gray literature, which was beyond the scope of the present study. In particular, while the NSCH and NS-CSHCN were created to support the Title V Block Grant program, we did not examine how the surveys have been used to inform states' needs assessments and evaluations.

Conclusions

Despite the limitations, this bibliometric analysis offers a systematic approach to describing the diversity of content areas and scientific contributions made possible by the NSCH/NS-CSHCN. Results provide insight into the reach of the surveys' data, the breadth of researchers and institutions using the data, and how the resulting scientific contribution has increased over time. Importantly, bibliometrics enable the quantification of this influence on

the field of pediatric health, to better characterize the surveys' contribution. This methodology may be applied in the future to revisit the ongoing impact of the NSCH/NS-CSHCN, as well as considered for measuring the impact of other national health surveys. Several recent and future efforts by HRSA MCHB may support increased use of the surveys by both federal and nonfederal institutions in the future. First, the change in temporality of survey administration since 2016 has increased the utility of the NSCH by providing new data on an annual basis which may be used for describing trends over time. Second, greater alignment between the revised NSCH and priorities identified by the pediatric health field may increase the use of the data by nonfederal institutions. Subsequent bibliometric analyses should explore whether these changes have led to increased scientific contributions. Third, additional research funding opportunities could be leveraged to promote use of the NSCH (eg, HRSA MCHB's Secondary Data Analysis Research Program to support investigator-initiated applied maternal and child health research).[32] Finally, more training on how to use the NSCH could encourage greater uptake of the data among nonfederal institutions such as university schools of public health or medicine. In the meantime, the current analysis serves as a baseline for documenting the scientific contribution of national data sources which are critical for supporting the work of the pediatric health field.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Abbreviations:

CDC	Centers for Disease Control and Prevention
HRSA	Health Resources and Services Administration
MCHB	Maternal and Child Health Bureau
NSCH	National Survey of Children's Health
NS-CSHCN	National Survey of Children with Special Health Care Needs
U.S.	United States

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What's New

Using bibliometric methods applied to 2 federal surveys of children's health, we found that the surveys are widely used to produce original research articles and frequently cited by subsequent articles, facilitating diverse scientific contributions.

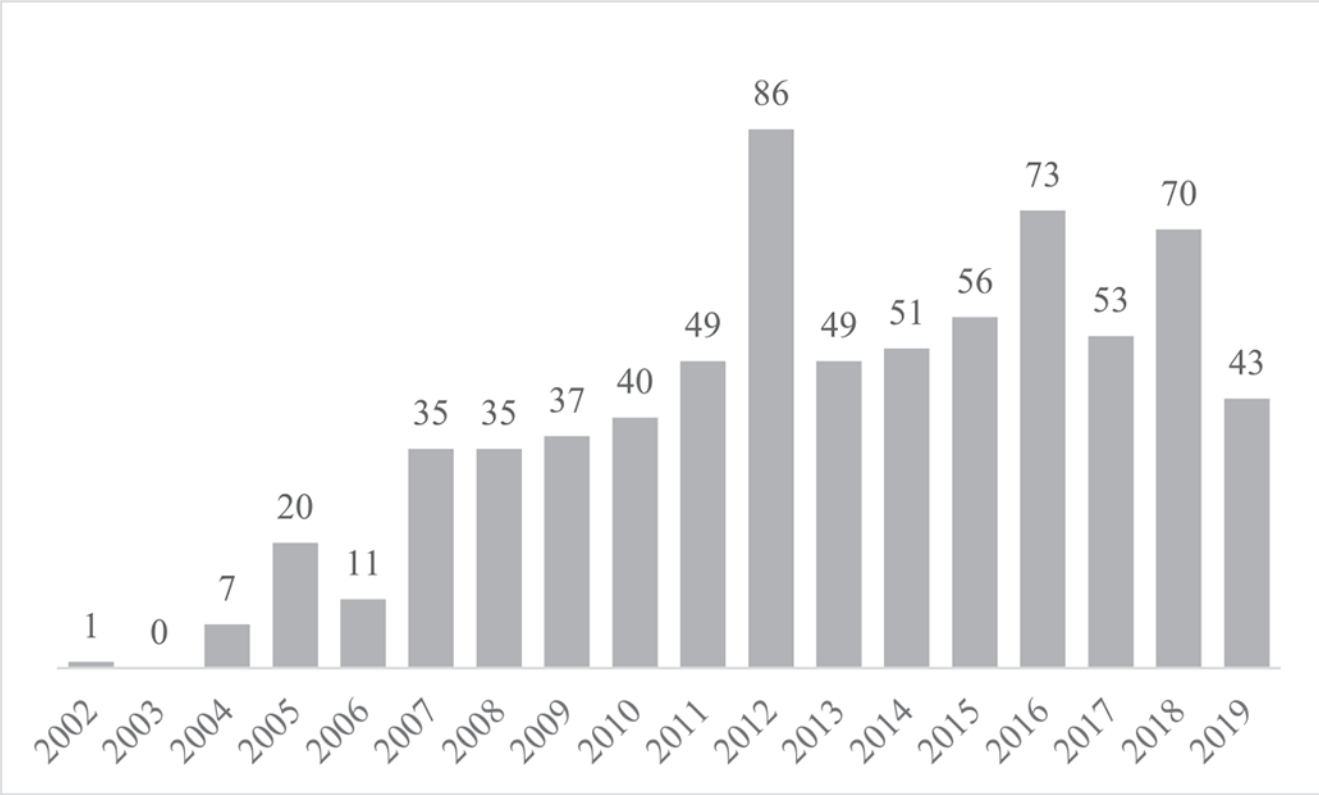

Figure 1.
Number of NSCH/NS-CSHCN publications by year. NOTE: Bar for 2019 includes only articles published in the first 6 months of 2019 (January-June). Source: Authors' analysis of Web of Science Core Collection and InCites.

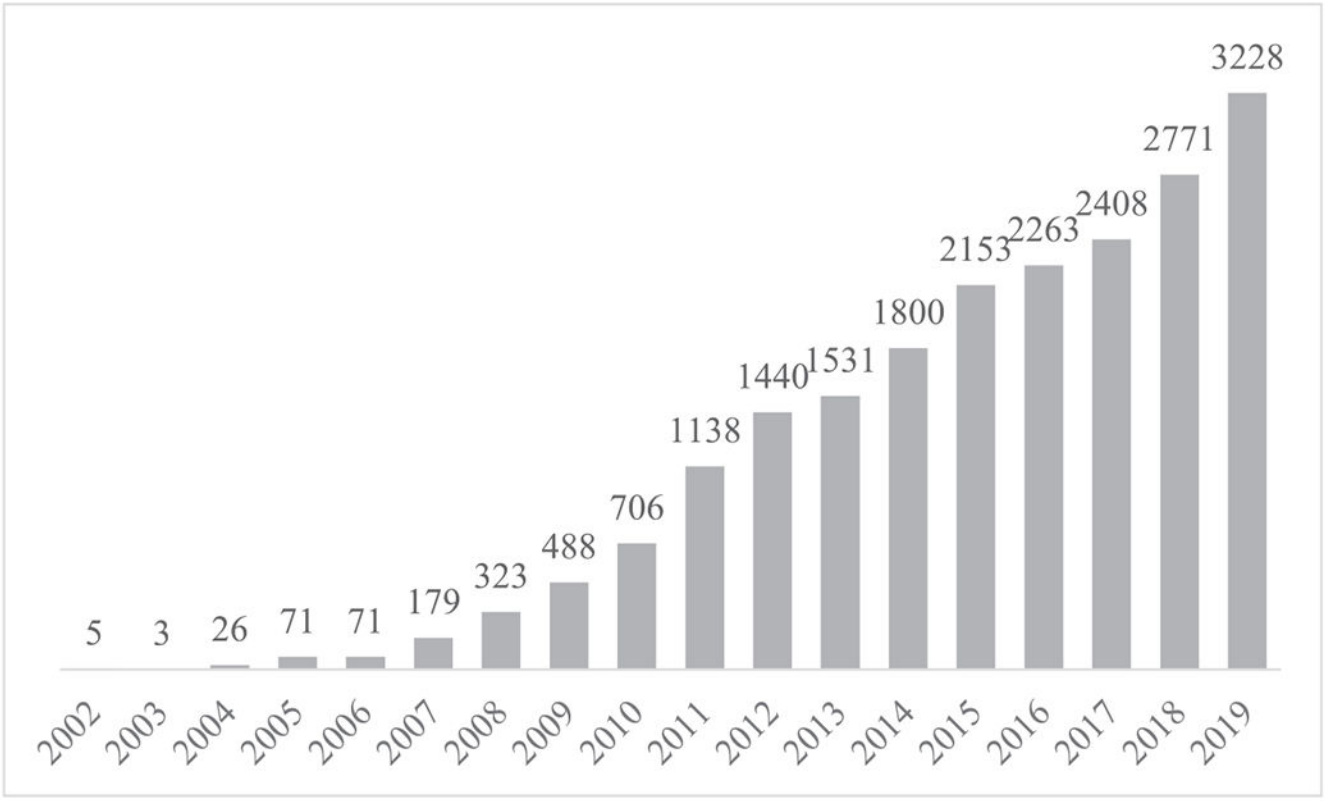

Figure 2.
Number of citations accumulated by year. Source: Authors' analysis of Web of Science Core Collection and In Cites.

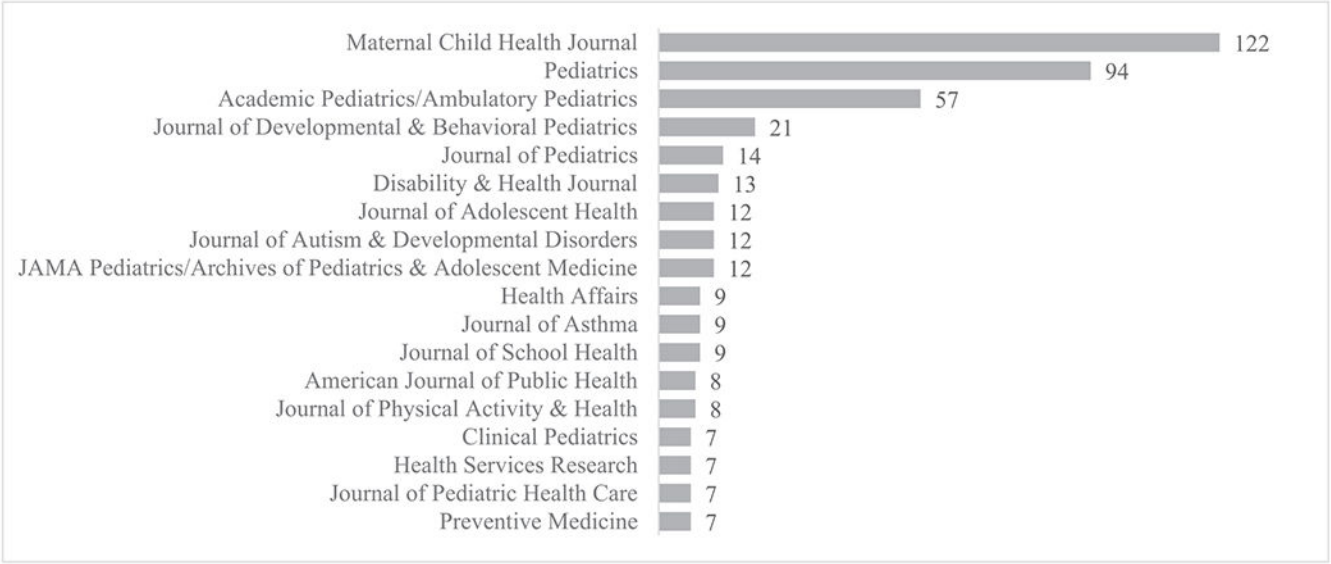

Figure 3.

Journals most frequently publishing NSCH/NS-CHSCN articles, by publication count. NOTE: In 2012, Archives of Pediatrics & Adolescent Medicine was retitled to JAMA Pediatrics. Similarly, in 2009, Ambulatory Pediatrics was retitled to Academic Pediatrics. Source: Authors' analysis of Web of Science Core Collection.

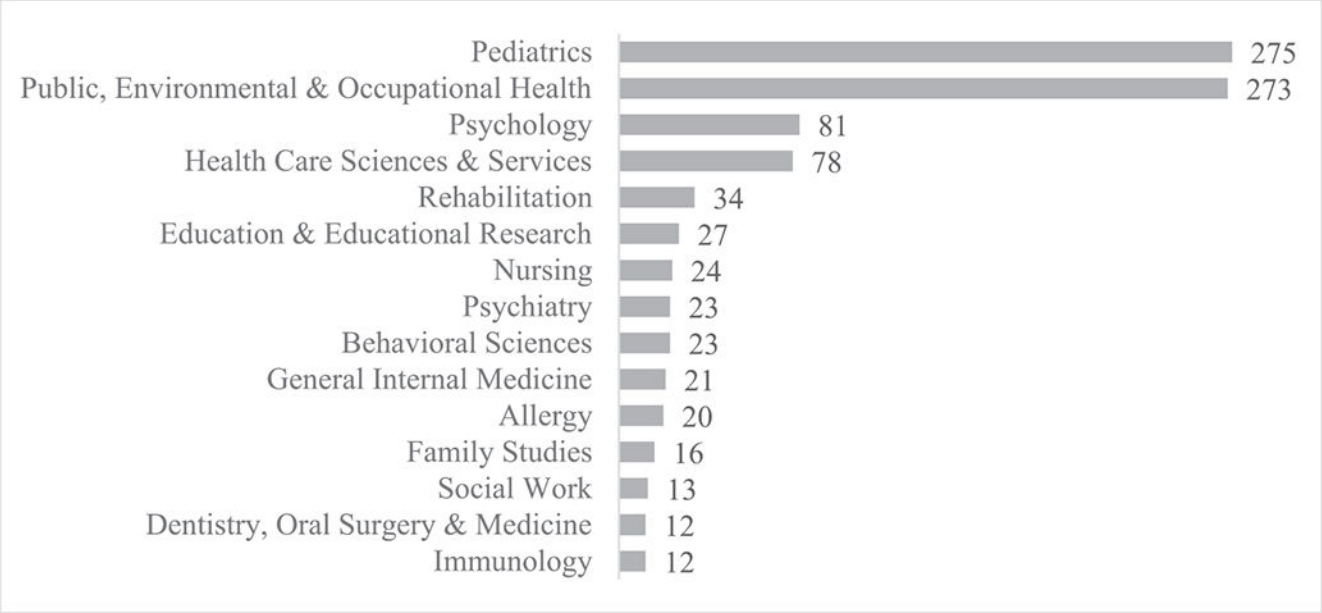

Figure 4.

Most common research areas covered by NSCH/NS-CHSCN articles, by publication count.

Source: Authors' analysis of Web of Science Core Collection.

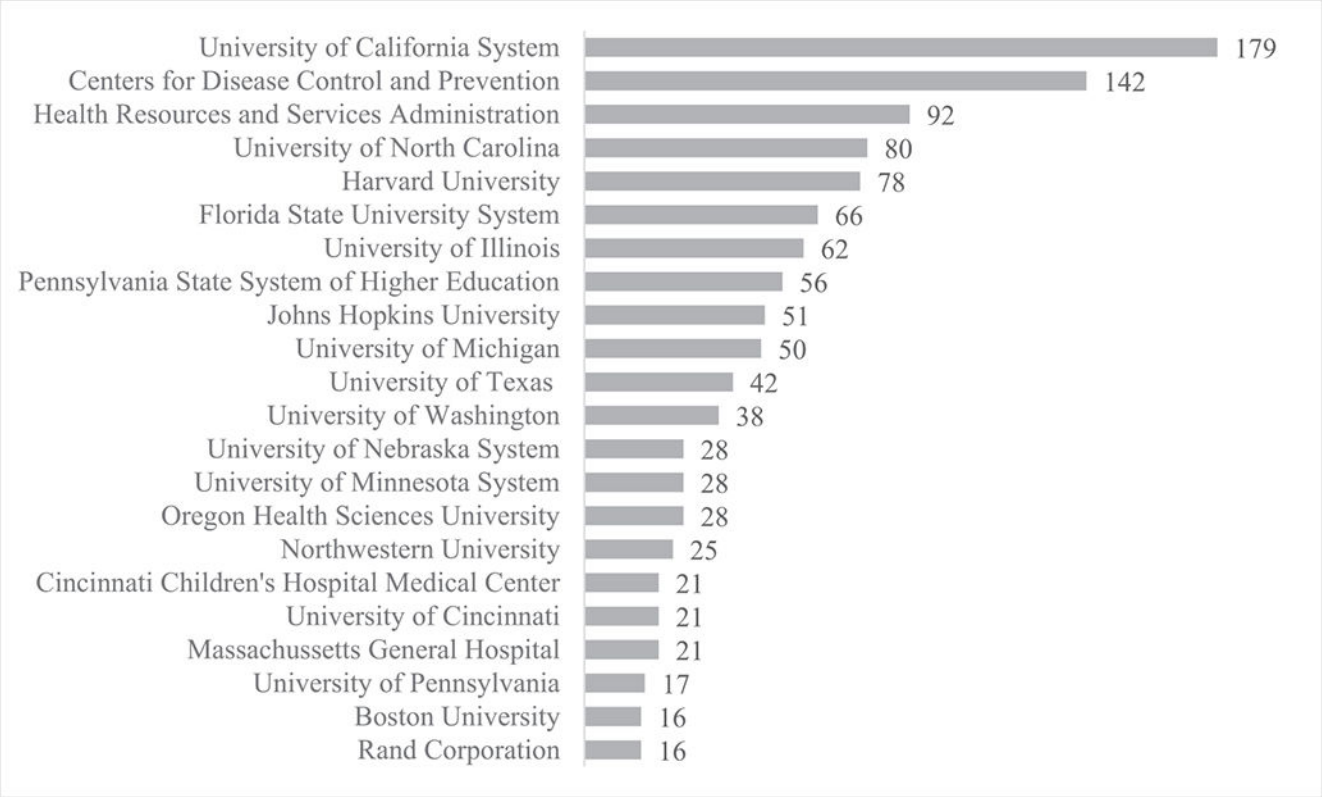

Figure 5.

Institutions most frequently publishing NSCH/NS-CHSCN articles, by publication count.

Source: Authors' analysis of Web of Science Core Collection.

Table 1.

Bibliometric Indicators for NSCH/NS-CSHCN Articles Published 2002–2019

Indicator	
Total number of publications	716
Sum of times cited by subsequent publications	22,449
Sum of times cited excluding self-citations	20,008
Sum of times review articles cite publications	1614
Average citation count	31.35
Portfolio H-Index *	74

* H-Index is an indicator that corresponds to the number of publications (N) in a given dataset having N or more citations. In this case, an H-Index of 74, indicates that 74 publications; in the publication set were cited at least 74 times each.

Source: Authors' analysis of Web of Science Core Collection and InCites. Citation metrics produced in July 2020.

Table 2.

Top 20 Cited Papers for NSCH-NS-CSHCN Articles Published 2002–2019*

	Paper	Number of Citations
1	Visser SN, Danielson ML, Bitsko RH, Holbrook JR, Kogan MD, Ghandour RM, Perou R, Blumberg SJ. Trends in the parent-report of health care provider-diagnosed and medicated attention-deficit/hyperactivity disorder: United States, 2003–2011. *J Am Acad Child Adolesc Psychiatry*. 2014 Jan;53(1):34–46.e2.	546
2	Kogan MD, Blumberg SJ, Schieve LA, Boyle CA, Perrin JM, Ghandour RM, Singh GK, Strickland BB, Trevathan E, van Dyck PC. Prevalence of parent-reported diagnosis of autism spectrum disorder among children in the US, 2007. *Pediatrics*. 2009 Nov;124(5):1395–403.	517
3	Shaw TE, Currie GP Koudelka CW, Simpson EL. Eczema prevalence in the United States: data from the 2003 National Survey of Children's Health. *J Invest Dermatol*. 2011 Jan;131(1):67–73.	382
4	Kogan MD, Strickland BB, Blumberg SJ, Singh GK, Perrin JM, van Dyck PC. A national profile of the health care experiences and family impact of autism spectrum disorder among children in the United States, 2005-2006. *Pediatrics*. 2008 Dec;122(6):e1149–58.	339
5†	Flores G, Tomany-Korman SC. Racial and ethnic disparities in medical and dental health, access to care, and use of services in US children. *Pediatrics*. 2008 Feb;121(2):e286–98.	275
6	Russ SA, Larson K, Halfon N. A national profile of childhood epilepsy and seizure disorder. *Pediatrics*. 2012 Feb;129(2):256–64.	269
7	Larson K, Russ SA, Kahn RS, Halfon N. Patterns of comorbidity, functioning, and service use for US children with ADHD, 2007. *Pediatrics*. 2011 Mar;127(3):462–70.	254
8	Smaldone A, Honig JC, Byrne MW. Sleepless in America: inadequate sleep and relationships to health and well-being of our nation's children. *Pediatrics*. 2007 Feb;119 Suppl 1:S29–37.	253
9	Singh GK, Siahpush M, Kogan MD. Rising social inequalities in US childhood obesity, 2003-2007. *Ann Epidemiol*. 2010 Jan;20(1):40–52.	251
10	Liptak GS, Benzoni LB, Mruzek DW, Nolan KW, Thingvoll MA, Wade CM, Fryer GE. Disparities in diagnosis and access to health services for children with autism: data from the National Survey of Children's Health. *J Dev Behav Pediatr*. 2008 Jun;29(3):152–60.	228
11	Strickland B, McPherson M, Weissman G, van Dyck P, Huang ZJ, Newacheck P. Access to the medical home: results of the National Survey of Children with Special Health Care Needs. *Pediatrics*. 2004 May;113(5 Suppl):1485–92.	223
12	Gurney JG, McPheeters ML, Davis MM. Parental report of health conditions and health care use among children with and without autism: National Survey of Children's Health. *Arch Pediatr Adolesc Med*. 2006 Aug;160(8):825–30.	214
13	Singh GK, Kogan MD, Van Dyck PC, Siahpush M. Racial/ethnic, socioeconomic, and behavioral determinants of childhood and adolescent obesity in the United States: analyzing independent and joint associations. *Ann Epidemiol*. 2008 Sep;18(9):682–95.	213
14	Yaghmaie P, Koudelka CW, Simpson EL. Mental health comorbidity in patients with atopic dermatitis. *J Allergy Clin Immunol*. 2013 Feb;131(2):428–33.	188
15	Waring ME, Lapane KL. Overweight in children and adolescents in relation to attention-deficit/hyperactivity disorder: results from a national sample. *Pediatrics*. 2008 Jul;122(1):e1–6.	185
16	Montes G, Halterman, JS. Psychological functioning and coping among mothers of children with autism: A population-based study *Pediatrics*. 2007 May:119(5):E1040–E1046.	183
17	Kuo DZ, Cohen E, Agrawal R, Berry JG, Casey PH. A national profile of caregiver challenges among more medically complex children with special health care needs. *Arch Pediatr Adolesc Med*. 2011 Nov;165(11):1020–6.	179
18	Bethell CD, Newacheck P, Hawes E. Adverse childhood experiences: Assessing the impact on health and school engagement and the mitigating role of resilience. *Health Aff*. 2014 Dec;33(12):2106–2115.	176
19	Schieve LA, Blumberg SJ, Rice C, Visser SN, Boyle C. The relationship between autism and parenting stress. *Pediatrics*. 2007 Feb;119 Suppl 1:S114—21.	176
20	Halfon N, Larson K, Slusser W. Associations between obesity and comorbid mental health, developmental, and physical health conditions in a nationally representative sample of US children aged 10 to 17. *Acad Pediatr*. 2013 Jan-Feb;13(1):6—13.	173

[*] It can take up to 2-3 years for a publication to begin accumulating citations as publications are dependent on subsequent publications for citation which may involve a lag time in between; therefore, publications in this list are unlikely to have a publication date after 2016-2017.

[†] An erratum for paper #5 was also published: Erratum. *Pediatrics*. 2009 Sept;124(3):999-1000. DOI: https://doi.org/10.1542/peds.2009-1724.

Source: Authors' analysis of Web of Science Core Collection and InCites. Citation metrics produced in July 2020.

Table 3.

Child Health-Related Topics From NSCH/NS-CSHCN Media Coverage, 2002 – 2019

Topic	Number of News Stories
Obesity	290
Adverse childhood experiences	180
Autism	95
ADHD	58
Mental health/health care	44
Special health care needs	41
Family meals	28
Well-being/health status	21
Oral health/health care	20
Reading/literacy	20
Chronic health conditions	18
Bullying/school safety	15
Preschool/child care	14
Allergies, asthma, eczema	13
Family structure	9
Media use (screen time)	8
Physical activity	8
Extracurricular activities	7
Developmental delays/screening	7
Poverty	7
Neighborhoods	6
Rural health/health care	6
Tobacco exposure	6
Medical homes	5
Discrimination	4
Health insurance	4
Vision problems/screening	4
School absenteeism	3
Sleep	3
Brain injury	3
Flourishing/resilience	3
Other	8
TOTAL	958

ADHD indicates attention deficit hyperactivity disorder.

Source: Authors' analysis of Lexis Advance database Nexis.

Table 4.

Selected News Stories Covering the NSCH/NS-CSHCN, 2002–2019

Topic	Source	Publication Date	Title
ADHD	CNN	09/02/2015	More ADHD cases being diagnosed at younger ages, report finds
Adverse childhood experiences	The Washington Post	10/20/2017	Nearly half of DC's children experience trauma, survey finds
Allergies, asthma, eczema	CBS	04/30/2013	Being born in United States raises allergy risk, study suggests
Autism	Consumer Health News	12/03/2018	Another tally puts autism cases at 1 in 40
Bullying/school safety	NBC	05/03/2010	Obese children more likely to be bullied
Chronic health conditions	CBS	05/02/2016	More US kids have chronic health problems, study finds
Family meals	Miami Times	09/29/2010	Family meals' fat-fighting effects vary by race
Family structure	Consumer Health News	11/05/2018	More Americans are raising their grandkids
Mental health/health care	CNN	02/08/2019	Nearly 1 in 7 US kids has a mental health condition, and half go untreated, study says
Obesity	Slate Magazine	03/02/2011	Which states have the most obese children?
Oral health/health care	The New York Times	05/23/2010	State lags in dental health care for children
Preschool/child care	The Boston Globe	11/08/2017	50,000 preschoolers suspended in 2016
Reading/literacy	The Christian Science Monitor	06/24/2014	Literacy crisis: Pediatricians enlist to prod parents to read to kids
Special health care needs	Medical XPress	12/27/2016	National study documents value of family-provided medical care for children
Well-being/health status	The Huffington Post	08/06/2014	10 of the healthiest places to live in America

Source: Authors' analysis of Lexis Advance database Nexis.