



Contents lists available at ScienceDirect

Chinese Nursing Research

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Original article

Bibliometrics study on the *Journal of American College Health*: 1994–2014[☆]Xiao Zheng^a, Yong-Ju Liu^a, Wei-Hong Hu^b, Huang Huang^c, Yan-Pei Ni^d, Hui-Ning Zhao^a, Zhen-Zhen Jin^a, Chi-Chen Zhang^{a,*}^a School of Management, Shanxi Medical University, Shanxi 030001, China^b Medical Department, Huikang Hospital, Shandong 266000, China^c School of Public Health, Yale University, New Haven, CT 06510, USA^d Network Center of Shanxi Medical University, Shanxi 030001, China

ARTICLE INFO

Article history:

Received 3 April 2017

Received in revised form

12 May 2017

Accepted 28 June 2017

Available online 10 August 2017

Keywords:

Journal of American College Health

CiteSpace

Bibliometrics

Knowledge mapping

Visualization analysis

ABSTRACT

Objective: To help readers around the world comprehensively understand the development of the journal and evolution of cooperation study, we employed a bibliometrics analysis for the *Journal of American College Health*.**Methods:** One-thousand-one-hundred-forty-three articles published in this journal from 1994 were analyzed using the bibliometrics and visualization software CiteSpace.**Results:** The annual number of published articles and cited studies increased. The published studies by RP Keeling and H Wechsler were at the forefront. “College student” and “alcohol” were prevalent keywords. University of Wisconsin and Harvard University were the institutional leaders of contributions.**Conclusions:** This journal provides an important platform for sharing research achievements and promoting cooperation in this field. The level of articles published is continually improving. A research cooperative network promoted by famous scholars and institutions is developing. However, cross-regional and international cooperation is relatively limited.© 2017 Shanxi Medical Periodical Press. Publishing services by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

1. Introduction

A significant journal in Web of Science is *Journal of American College Health*, formerly known as *Journal of American College Health Association* (1952–1982) (1982–current). The journal provides information related to health in institutions of higher education and publishes articles on many areas of this broad field; the subjects covered by this journal include Addictions and Substance Use, Allied Health, Behavioral Medicine, Behavioral Sciences, Community Health, Counseling, Health & Society, Health Conditions, Health and Social Care, Mental Health, Population Health, among others. Many well-known experts or scholars, such as RP

Keeling, H Wechsler and WA Christmas, have frequently published excellent articles in the journal, which has helped develop the journal.

Using the bibliometrics and visualization software CiteSpace, we explored and directly reported on the research focus, development and research cooperation of scientific studies published in *Journal of American College Health* from 1994 to 2014. We performed a multi-angular, thorough Bibliometrics and visualization analyses and provide a scientific knowledge map of the analyses. Our aim was to help readers around the world comprehensively understand the development of the journal and evolution of cooperation study.

2. Methods

2.1. Data source

Documents were collected from the scientific literature database Web of Science. The search formula was “Publication Name = *Journal of American College Health*”. The scope was limited

[☆] The study was supported and funded by MOE (Ministry of Education in China), the research projects of Humanities and Social Sciences (No. 13YJCZH239) and National Natural Science Foundation of China (No. 71403155). And it is also supported by Shanxi Federation of Social Science Circles (No. SSKLZDKT2014084).

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Peer review under responsibility of Shanxi Medical Periodical Press.

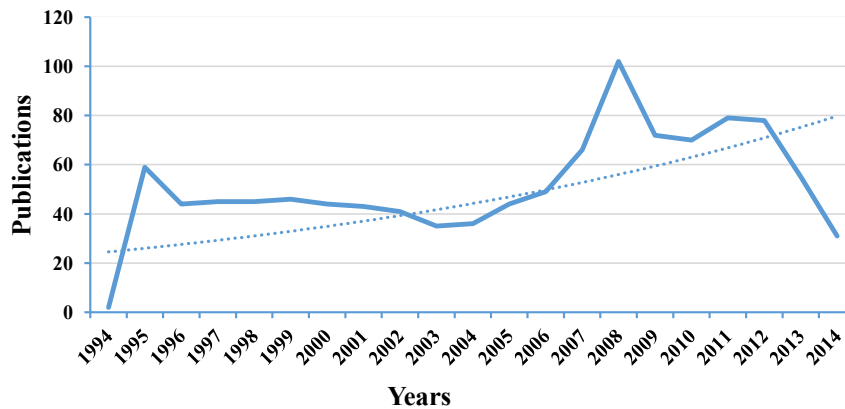


Fig. 1. The annual distribution of the number of published articles in the *Journal of American College Health*.

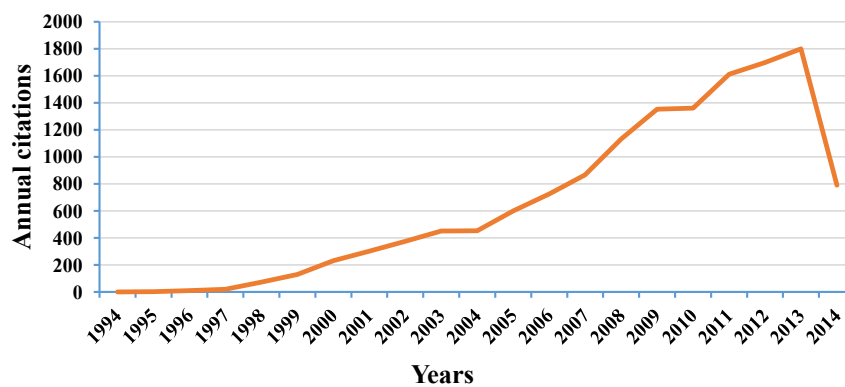


Fig. 2. The annual cited frequency of *Journal of American College Health*.

Table 1

Top 50 cited study distribution and citations in the *Journal of American College Health*.

Publication year	Article number	Total citations	Average citations
1994	1	96	96.0
1996	3	367	122.3
1997	3	417	139.0
1998	4	675	168.8
1999	4	408	102.0
2000	9	733	81.4
2001	2	138	69.0
2002	3	859	286.3
2003	4	311	77.8
2004	3	240	80.0
2005	6	527	87.8
2006	5	419	83.8
2008	2	113	56.5
2009	1	79	79.0
Total	50	5382	107.6

to 1994–2014. There were 1143 retrieved studies that met eligibility criteria for inclusion in the final analysis. The date of retrieval was April 17, 2014.

2.2. Study methods

In this study, we used visual software, CiteSpace, Vision 3.8.R3, as a research tool. The software was developed by Dr. Chen^{1–5} in Drexel University, USA. CiteSpace is a freely available Java application for visualizing and analyzing the trends and patterns in scientific literature. It was designed as a tool for progressive knowledge domain visualization.^{6,7} The software focuses on finding

critical points in the development of a field, especially intellectual turning points and pivotal points. CiteSpace offers various functions to facilitate the understanding and interpretation of network and historical patterns, including identifying fast-growth topical areas, finding citation hotspots, decomposing a network into clusters, automatic labeling of clusters with terms from citing articles, geospatial patterns of collaboration, and unique areas of international collaboration. This software has been widely used in many fields, such as Information Science and Life Science.

After inputting the valid research documents into the software, we set the analysis period from 1994 to 2014 and time division as 1 year; then, 20 time slices were formed. The relevant nodes were selected and analyzed correlatively according to different analyzed contents, i.e., authors, institutions, keywords, and so on; the threshold level was set to (2, 2, 20), (4, 3, 20), and (4, 3, 20) with Top N per slice = 50.^{8–11}

3. Results

3.1. Analysis of the annual number of published journal articles

The distribution of annual journal publications can reflect the total annual number of published journal articles and is a key indicator to evaluate the journal data. As shown in Fig. 1, the annual number of published articles in *Journal of American College Health* fluctuates, but there is a general trend of an increase, and the evolution of the published article number can be divided into three stages. The first stage is from 1994 to 2002; during this time, the annual published articles number increased rapidly and fluctuated.

Table 2
Top 30 cited articles and their information from the *Journal of American College Health*.

Rank	Title	Author	Publication year	Total citations	Average citations
1	Trends in college binge drinking during a period of increased prevention efforts-Findings from 4 Harvard School of Public Health College Alcohol Study surveys: 1993–2001	H Wechsler JE Lee M Kuo M Sebring TF Nelson H Lee	2002	693	53.3
2	College binge drinking in the 1990s: A continuing problem-Results of the Harvard School of Public Health 1999 College Alcohol Study	H Wechsler JE Lee MC Kuo H Lee	2000	561	37.4
3	Changes in binge drinking and related problems among American college students between 1993 and 1997-Results of the Harvard School of Public Health College Alcohol Study	H Wechsler GW Dowdall G Maenner J Gledhill-Hoyt H Lee	1998	372	21.9
4	An exploration of the drive for muscularity in adolescent boys and girls	DR McCreary DK Sasse	2000	235	15.7
5	Results from the 1995 National College Health Risk Behavior Survey	KA Douglas JL Collins C Warren L Kann R Gold S Clayton JG Ross LJ Kolbe	1997	209	11.6
6	Misperceptions of the norms for the frequency of alcohol and other drug use on college campuses	HW Perkins PW Meilman JS Leichter JR Cashin CA Presley	1999	165	10.3
7	Changing the perception of the norm: A strategy to decrease binge drinking among college students	M Haines SF Spear	1996	161	8.5
8	Student perceptions of methylphenidate abuse at a public liberal arts college	Q Babcock T Byrne	2000	147	9.8
9	Prevalence and motives for illicit use of prescription stimulants in an undergraduate student sample	CJ Teter SE McCabe JA Cranford CJ Boyd SK Guthrie	2005	146	14.6
10	Binge drinking, tobacco, and illicit drug use and involvement in college athletics-A survey of students at 140 American colleges	H Wechsler AE Davenport GW Dowdall SJ Grossman SI Zanakos	1997	133	7.4
11	Alcohol use and related consequences among students with varying levels of involvement in college athletics	JS Leichter PW Meilman CA Presley JR Cashin	1998	131	7.7
12	Underage college students' drinking behavior, access to alcohol, and the influence of deterrence policies-Findings from the Harvard School of Public Health College Alcohol Study	H Wechsler JE Lee TF Nelson M Kuo	2002	112	8.6
13	Social norms approaches using descriptive drinking norms education: A review of the research on personalized normative feedback	MA Lewis C Neighbors	2006	106	11.8
14	Preliminary normative data on DSM-IV attention deficit hyperactivity disorder in college students	E Heiligenstein LM Conyers AR Berns MA Smith	1998	104	6.1
15	Medical use, illicit use, and diversion of abusable prescription drugs	SE McCabe CJ Teter CJ Boyd	2006	102	11.3
16	Trends in marijuana and other illicit drug use among college students: Results from 4 Harvard School of Public Health College Alcohol Study surveys: 1993–2001	M Mohler-Kuo JE Lee H Wechsler	2003	100	8.3
17	Stimulant medication use, misuse, and abuse in an undergraduate and graduate student sample	BP White KA Becker-Blease K Grace-Bishor	2006	99	11
17	Smoking initiation and smoking patterns among US college students	SA Everett CG Husten L Kann CW Warren D Sharp L Crossett	1999	99	6.2

(continued on next page)

Table 2 (continued)

Rank	Title	Author	Publication year	Total citations	Average citations
19	Weight changes, exercise, and dietary patterns during freshman and sophomore years of college	SB Racette SS Deusinger MJ Strube GR Highstein RH Deusinger	2005	96	9.6
19	Substance use and abuse among college-students-a review of recent literature	ML Prendergast	1994	96	4.6
21	Understanding men's health and illness: A gender-relations approach to policy, research, and practice	T Schofield RW Connell L Walker JF Wood DL Butland	2000	94	6.3
22	College smoking-cessation using cell phone text messaging	JL Obermayer WT Riley	2004	93	8.5
23	Cigarette smoking practices among American college students: Review and future directions	J Jean-Mary F Patterson C Lerman VG Kaufmann GA Neuner J Audrain-McGovern	2004	88	8
23	Assessing overweight, obesity, diet, and physical activity in college students	TTK Huang KJ Harris RE Lee N Nazir W Born H Kaur	2003	88	7.3
25	College students define binge drinking and estimate its prevalence: Results of a national survey	H Wechsler MC Kuo	2000	83	5.5
26	My student body: A high-risk drinking prevention Web site for college students	E Chiauzzi TC Green S Lord C Thum M Goldstein	2005	82	8.2
27	Health-related variables and academic performance among first-year college students: Implications for sleep and other behaviors	MT Trockel MD Barnes DL Egget	2000	82	5.5
28	Internet use among college students: An exploratory study	KJ Anderson	2001	80	5.7
29	American College Health Association-National College Health Assessment Spring 2008 Reference Group Data Report (Abridged)	M Hoban	2009	79	13.2
29	Illicit use of prescribed stimulant medication among college students	KM Hall MM Irwin KA Bowman W Frankenberger DC Jewett	2005	79	7.9

The second stage is from 2003 to 2006, which is when the annual number of published articles gradually fluctuated from 40 to 60. The third stage is from 2007 to 2014; in this stage, the annual number of published articles changed significantly and sharply fluctuated. The largest number of publications reached more than 100 in 2008, and a decreasing tendency was observed in the subsequent 3 years (As the data download terminal date is April 17, 2014, the data statistics and content for that year are incomplete).

3.2. Analysis of literature citations

Through the analysis of the *Journal of American College Health's* literature citation, as shown in Fig. 2, the annual number of cited studies has generally been increasing with more than 1600 citations in the last 3 years.

According to the rank of cited studies in the Web of Science, Table 1 shows the statistical overview of the top 50 annual citations by publication year. In 2000, the cumulative number of highly cited studies reached a maximum with 9 articles, and there were 6 in 2005. The highest average cited article was published in 2002, which was cited 286.3 times. The total citations for the top 50 most cited studies was 5832 with an average of 116.6 per article.

Table 2 lists 30 of the most commonly cited articles and their relative information; the most frequently cited studies, in the order of citation number, were by H Wechsler, "Trends in college binge drinking during a period of increased prevention efforts-Findings

from 4 Harvard School of Public Health College Alcohol Study surveys: 1993–2001",¹² "College binge drinking in the 1990s: A continuing problem-Results of the Harvard School of Public Health 1999 College Alcohol Study"¹³ and "Changes in binge drinking and related problems among American college students between 1993 and 1997-Results of the Harvard School of Public Health College Alcohol Study".¹⁴

3.3. Analysis of author cooperation

We generated an author cooperation map using visual software; the circle size demonstrates the number of studies by the related author. The circle's color and thickness represent the number of published studies in different years for the sample mentioned above. The connecting line between circles displays the cooperation between different authors; its thickness and color stand for the cooperation frequency and the first cooperation year, respectively (the same as the analysis of keywords and institutions).^{15–19} There were 908 nodes and 412 connecting lines when selecting authors as network nodes for analysis. In this paper, we merged authors and unified the same authors whose names were cited differently using SPSS13.0 and Excel software. For example, DORMAN, J and Dorman, John M were replaced by JM Dorman; also, Turner, James C. and Turner, James were replaced by JC Turner. We distinguished authors with same names belong to different institutions, such as Adam E. Barry from Texas A&M was marked as Adam E. Barry 1



Fig. 3. The authors' collaboration network visualization map for the *Journal of American College Health*.

Table 3
Top 10 prolific authors and their number of articles in the *Journal of American College Health*.

Rank	Author	Article number	Original publication year
1	RP Keeling	36	1995
2	H Wechsler	18	1997
3	WA Christmas	13	1998
4	E Heiligenstein	10	1996
5	PW Meilman	9	1998
5	HS Turner	9	1999
5	AJ Schwartz	9	1996
5	JC Turner1	9	2008
9	R Fennell	8	2009
10	CA Presley	7	1997
10	RG Sawyer	7	1996
10	JM Dorman	7	1995

Univ.; Adam E. Barry from Univ. Florida was marked as Adam E. Barry 2; JC Turne from Univ Virginia was marked as JC Turner 1; and JC Turner from Ctr Dis Control & Prevent was marked as JC Turner2. Because of the large data size, Fig. 3 only shows the authors' information which frequency ≥ 4 . Typical teams that had more contributions and that worked closer among all authors include RP Keeling, HS Turner, and JL Hurley; H Wechsler, M Kuo, M Seibring, and K Patrick; WA Christmas and JC Turner1; and PW Meilman, CA Presley, and JR Cashin.

Table 3 lists the top 10 authors by their number of publications and the frequency of references of these authors, reflecting the number of articles to which they contribute. The author frequency here includes all co-authored articles, which can include authorship as a corresponding author, first author, second author and so on. From Table 3, the number of published articles among 12 authors ranged from 7 to 36, and the average number of published articles was 11.8; RP Keeling, H Wechsler, and WA Christmas led the group with more than 10 articles each.

3.4. Analysis of keywords and research focuses

Keywords are the essence and core for one article. To more objectively and accurately analyze the data, we classified and combined some keywords. Multiple words with the same meaning were merged into one relevant word. For example, “university-students”, “college-students”, “college students” and “university-students” were merged into “college student”; “adolescents”, “adult children”, “young adults” and “young-adults” were merged into “adolescent”; and “university”, “universities”, “campuses”, and “colleges” were merged into “college”. By selecting keywords as network nodes for the analysis, 361 nodes and 865 connecting lines

were collected. Table 4 shows the keywords with a frequency ≥ 25 . “College student”, “alcohol”, “students”, “behavior” and “adolescent” are the top 5 for most frequently listed keyword.

To explore the research focuses of studies published in the *Journal of American College Health*, we performed knowledge mapping analysis on keyword co-occurrence network. Because of the large amount of data, Fig. 4 only shows the keywords with frequency ≥ 25 . The high frequency keywords can be divided into 6 groups. The first group considers the study population, such as “college student”, “students”, “adolescent” and “women”. The second group considers behaviors and influencing factors, such as “alcohol”, “behavior”, “binge drinking” and “smoking”. The third group considers intervention measures, such as “prevention”, “physical activity”, “health education” and “exercise”. The fourth group considers health-related areas, such as “health”, “college health” and “mental health”. The fifth is defined as others, such as “prevalence”, “validation”, “consumption” and “consequences”.

3.5. Analysis of institutions cooperation

To further understand the difference in the research contributions among the institutions to the *Journal of American College Health*, we selected the institutions as network nodes for analysis. Because some articles contain several authors who may belong to a same institution or one author who has published several articles as a member of a same institution, the institution frequency does not equal the number of the institution members who participated in the studies. Therefore, the institution frequency cannot accurately reflect the research strength, but it can be observed that more researchers from such institutions gradually become involved in generating scientific research that is relevant to college students' health.²⁰ Table 5 lists the 46 institutions with frequency ≥ 7 ; the Univ. Wisconsin published the largest number of studies, 50. The second was the Harvard Univ. with 25 articles. Tied for third are Univ. Florida and Univ. Maryland with 23 articles each. We have integrated the data of the institutions for different authors (Table 5) by unifying the names of colleges and its affiliates; for instance, some institutions are all classified as Univ Calif, including Univ. Calif Los Angeles, Univ. Calif Santa Barbara, Univ. Calif San Diego, UNIV. CALIF. LOS ANGELES and Univ. Calif. San Francisco. The following institutions are all classified as State University of New York (SUNY): SUNY Buffalo and SUNY Stony Brook.

We finished the *Journal of American College Health* institution cooperation map using visual software. Fig. 5 shows the relationship among institutions based on the threshold condition. Through selecting institutions as network nodes, there were 433 nodes and 225 connecting lines. Because of the large amount of data, the

Table 4
The keywords with frequency ≥ 25 in the *Journal of American College Health*.

Rank	Frequency	Original publication year	Keywords
1	378	1994	College student
2	160	1995	Alcohol
3	139	1995	Students
4	132	1994	Behavior
4	132	1994	Adolescent
6	131	1996	Binge drinking
7	128	1997	Health
8	114	1995	College health
9	108	1995	College
10	99	1995	Prevalence
11	92	1996	Drinking
12	88	1995	Prevention
13	87	1996	Smoking
14	85	1995	Women
15	81	1997	Physical activity
16	76	1998	United-states
17	75	1996	Risk
18	74	1994	Health education
19	65	2006	Mental health
20	61	1997	Exercise
21	57	1998	Intervention
22	55	1998	Gender
22	55	1995	Depression
24	45	1995	Adult
25	43	1998	Validation
26	36	1994	Sexual behavior
26	36	1999	Perception
26	36	1995	Attitudes
29	35	2003	Substance use
29	35	1994	Consumption
31	34	1999	Stress
31	34	2006	Community health
31	34	2006	Obesity
34	33	1996	Education
35	29	1996	Risk-factors
36	28	1999	Consequences
37	27	2007	Predictors
37	27	1995	Children
37	27	1994	Drug-use
40	26	1995	Abuse
40	26	1997	Rape
42	25	1999	Population
42	25	2002	Harvard-school

figure only shows the institutions with a publication number ≥ 7 . These institutions were more likely to have close collaborations and included Harvard Univ., So Illinois Univ., Univ. Washington, Univ. Massachusetts; Univ. Florida, Brown Univ., Brown Univ., Univ. Montana; Univ. Maryland, Ohio State Univ., Univ. N Carolina, Univ. Michigan; Univ. Calif., Univ. Kentucky, and Univ. Minnesota.

4. Discussion

According to the annual journal, published article and literature citation frequency provided by Web of Science, the annual number of cited studies is increasing. The published articles surpassed 100 and peaked in 2008. The number of cited studies is also generally increasing. The published articles have had a decreasing trend annually in the last three years; however, the annual citation frequency continues to increase. A steady elevation in the annual citation frequency in the last three years shows that *Journal of American College Health* is paying increasing attention to the quality of the article. The target is switching from quantity breakthroughs to quality development, which is one of the reasons for the increase in the *Journal of American College Health's* impact factor. Most of the highly cited studies emerged before 2010, typically in 2000. The 30 most cited articles are listed in Table 2; 12 articles focused on college students drinking and binge drinking, 10 evaluated substance use and 3 articles focused on college students' smoking habits. These studies suggested that college students drinking, smoking, and substance use received significant attention from readers and researchers, that these research directions are also the research hotspot in each period, and that promoting healthy behaviors in college students is a focus of the *Journal of American College Health*.

Based on the analysis of the cooperation network between authors, we found that ML Prendergast, PM Pinder, PM Fabiano, S Jaffe, RP Keeling and H Wechsler published articles in the early period of the *Journal of American College Health*. With the development of study areas and the journal itself, increasing scholars have contributed to relevant scientific research in the field of college student health, such as M Kuo, M Seibring, C Neighbors and BD Foy. These authors published related academic achievements and formed a wide cooperation network that promoted the sustained development of this journal. Meanwhile, with additional time, exchanges and cooperation between experts and scholars also became closer. For example, RP Keeling and HS Turner were indirectly linked together and formed a cooperative team with scholar JL Hurley²¹; H Wechsler cooperated with M Kuo, JE Lee, H Lee and M Seibring and formed a cooperation network in which the H Wechsler was in the central position.^{22–24} The team with WA Christmas, JC Turner 1, Jennifer Bauerle, and Adrienne Keller and the team organized by AJ Schwartz, RA Manchester, BN Steenbarger, MK Heffern formed a cooperation chain. It is noteworthy that some authors usually publish many studies in a small active lifespan; however, WA Christmas, JC Turner 1, and R Fennell have maintained a high degree of activity as well as publication

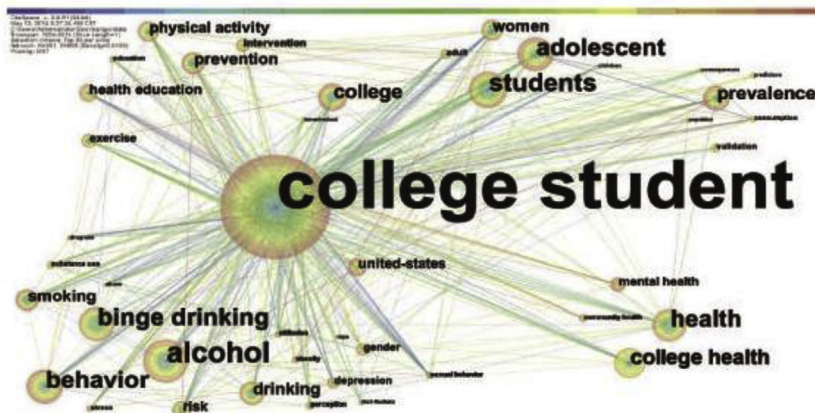


Fig. 4. The high frequency keyword network visualization map for the *Journal of American College Health*.

Table 5
The institutions with frequency ≥ 7 for *Journal of American College Health*.

Rank	Frequency	Original publication year	Institutions
1	50	1995	Univ Wisconsin
2	25	1998	Harvard Univ
3	23	1999	Univ Florida
3	23	1996	Univ Maryland
5	19	1995	Univ Calif
5	19	2001	Ohio State Univ
7	18	1994	So Illinois Univ
7	18	2004	Univ N Carolina
9	17	1999	Univ Michigan
9	17	1999	Univ Washington
11	16	1998	Duke Univ
11	16	1999	Univ Kentucky
13	15	1999	Univ Texas
14	14	1998	Cornell Univ
15	13	1998	Univ Massachusetts
15	13	1998	Univ Minnesota
17	12	2002	Amer Coll Hlth Assoc
17	12	1998	Kent State Univ
17	12	2000	Univ Virginia
17	12	2002	Rutgers State Univ
21	11	1998	Arizona State Univ
22	10	2002	Columbia Univ
22	10	2002	Boston Univ
22	10	1998	Brown Univ
22	10	1996	Stanford Univ
26	9	1998	Univ Rochester
26	9	2000	Univ Illinois
26	9	1999	Syracuse Univ
26	9	2001	Univ S Carolina
26	9	2003	Univ Montana
26	9	1998	Univ Alabama
32	8	2001	Texas A&M Univ
32	8	1998	E Carolina Univ
32	8	1999	Ctr Dis Control & Prevent
32	8	1998	Univ S Florida
32	8	2000	Emory Univ
32	8	2003	Miami Univ
32	8	2000	SUNY
39	7	1996	San Diego State Univ
39	7	1999	Penn State Univ
39	7	2005	Univ Missouri
39	7	1999	Florida State Univ
39	7	2011	Univ New Hampshire
39	7	2002	Purdue Univ
39	7	2004	Indiana Univ
39	7	2009	Univ Toledo

contributions. With the development of the college health discipline, emerging scientific research teams have emerged, such as teams represented by Daniel Eisenberg, James Price, Adam E. Barry 2, Christine A. Gidycz, and Byron L. Zamboanga, which promoted

the introduction of fresh, novel ideas into this research area and facilitated the steady development of the journal and discipline.

We can find the research focuses and development trends of published articles in the journal through analysis of the keywords map. As a serious risk factor for poor health, “alcohol” had the highest frequency, which has received more attention from researchers. In terms of the study target population, “college student” had the highest frequency, which suggests that this population is frequently studied. The word “prevention” had the highest frequency in intervention programs with “physical activity” and “health education” as second and third, respectively, suggesting that interventions aimed at students are still concentrated in the traditional method of “health education”.²⁵ Furthermore, in terms of words related to health, “health”, “college health” and “mental health” were frequent, indicating that college students’ psychological health problem has also been considered in many studies.

It is worth mentioning that “United States” is the only place whose name appears in keywords at a high frequency, indicating the United States significantly contributes to the *Journal of American College Health*. This phenomenon is also affected by the journal scope and language.

According to visual analysis of cooperation among institutions, we can understand the contributions to the journal from each institution and the cooperation among them.^{26,27} According to the institution cooperation network map, it can be concluded that institutions with more publications are mostly concentrated in various colleges, universities and centers for disease control and prevention, which contribute the most to the journal. The following institutions had a high frequency of contribution, Univ. Wisconsin, Harvard Univ, Univ Florida, Univ Maryland, and Univ Calif, among others. Many studies from these institutions have suggested that they are committed to research in the field of college and university health of *Journal of American College Health*. From the perspective of collaboration, cooperation between institutions is closely connected and their relationships are complex; local cooperation networks, including Harvard Univ, Univ Florida, Univ Maryland and Univ Calif, are centers that work together through direct or indirect relationships and have formed a large, complex comprehensive cooperation network. Univ Wisconsin acts as a core. The articles published in this journal do not lack cross-organizational cooperation, while cross-regional and international cooperation are relatively limited.

With the help of a scientific knowledge map, we analyzed the current situation of scientific cooperation within this journal in which many experts, scholars and research institutions provided important contributions to the development of this journal. Various



Fig. 5. The institution network visualization map for the *Journal of American College Health*.

scholars and institutions performed research and gradually formed an intimate, complex, cooperative relationship. The networks learned from each other and inspired each other, promoting the development of the research field as well as the journal itself.

As an important international journal in the field of college health, *Journal of American College Health* has attracted increasing attention from experts, scholars and researchers because of the journal and articles published in it. The findings presented here offer an important platform for experts and scholars around the world to present their scientific research and to discuss new research trends in the field of college health.

5. Conclusions

As an important international journal in the field of college health, the *Journal of American College Health* has attracted more attentions of the experts, scholars and researchers because of the journal itself and the articles published in it. It will offer an important platform for experts and scholars around the world to present their scientific research, and to provide the new research trend in the field of college health for readers.

6. Limitations

As in other studies, this study has some limitations, such as database use authorization and functional restrictions of CiteSpace software, which may result in incomplete descriptions of cooperative relationships. However, the Web of Science is widely recognized by the scientific community. This data source can reflect the general situation and development trend of college student health research beyond the research presented here.

Conflicts of interest

All contributing authors declare no conflicts of interest.

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How to cite this article: Zheng X, Liu Y-J, Hu W-H, et al. Bibliometrics study on the *Journal of American College Health*: 1994–2014. *Chin Nurs Res*. 2017;4:133–140. <http://dx.doi.org/10.1016/j.cnre.2017.07.004>