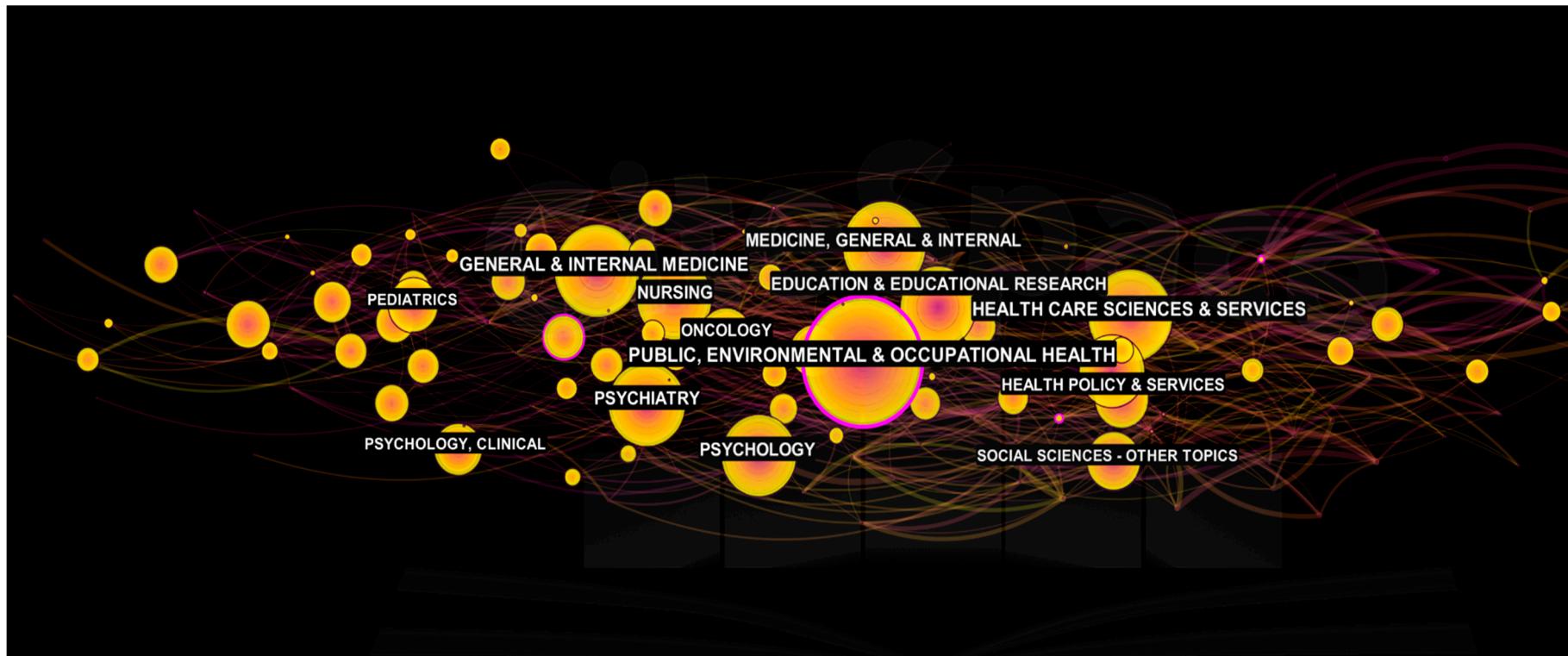
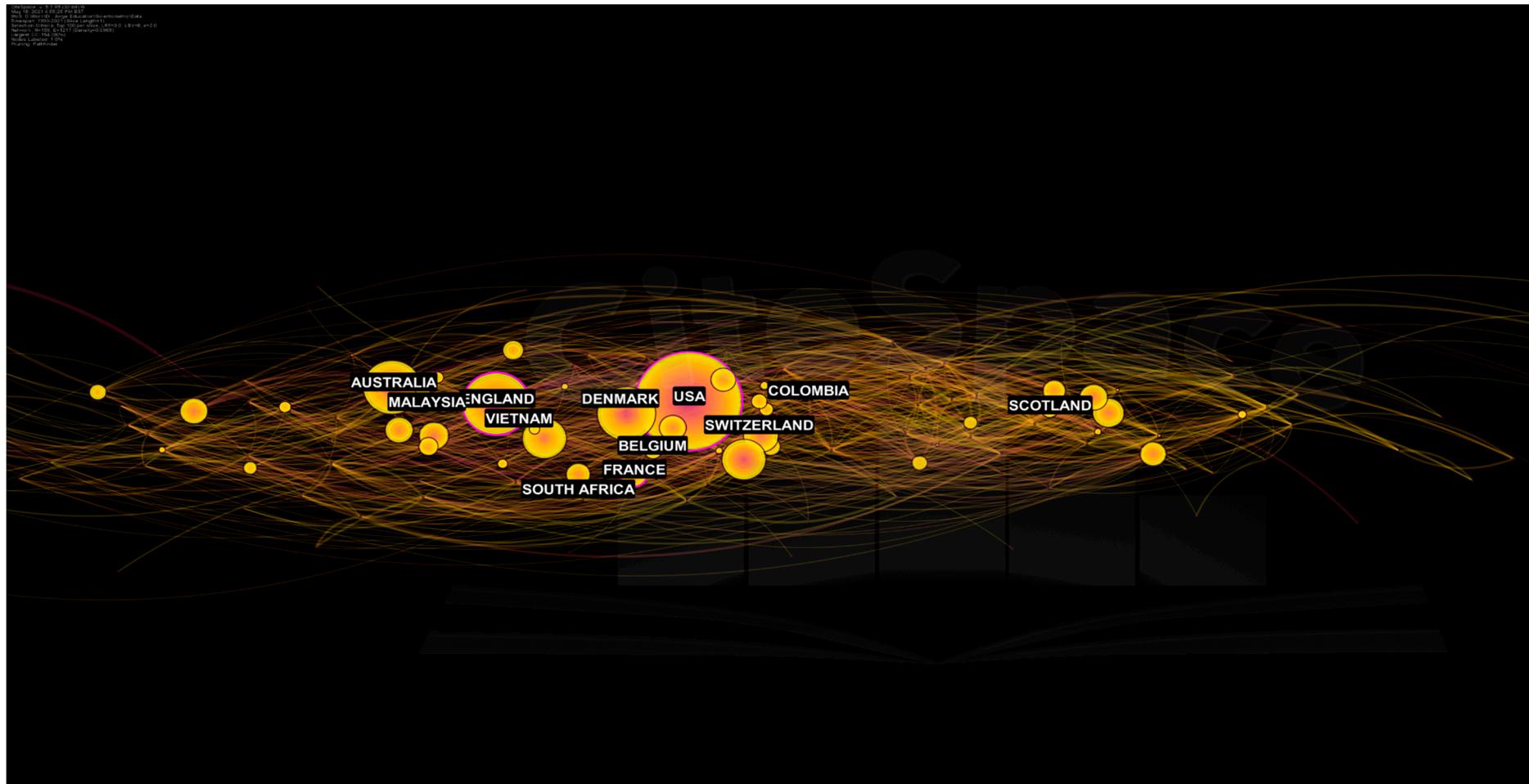


Supplementary Material

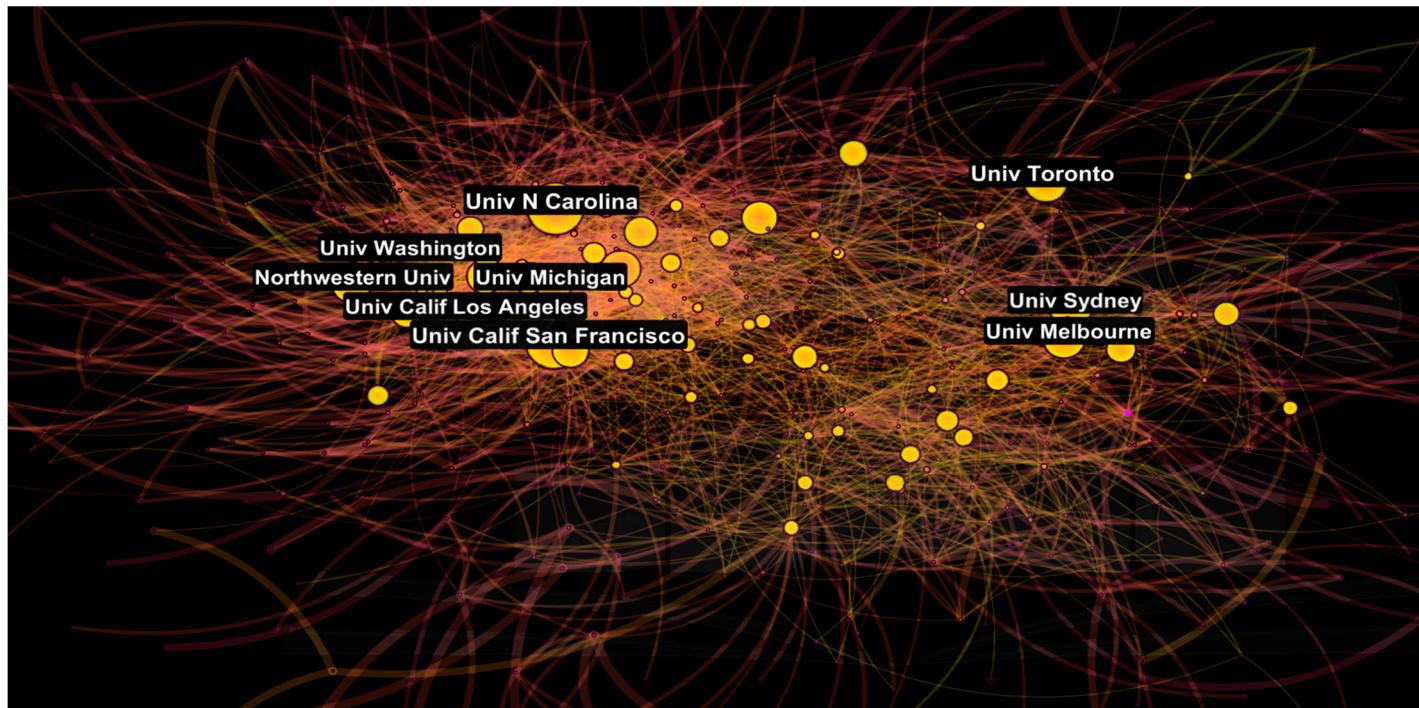
Supplementary Figure S1: Disciplines of research central in patient education research



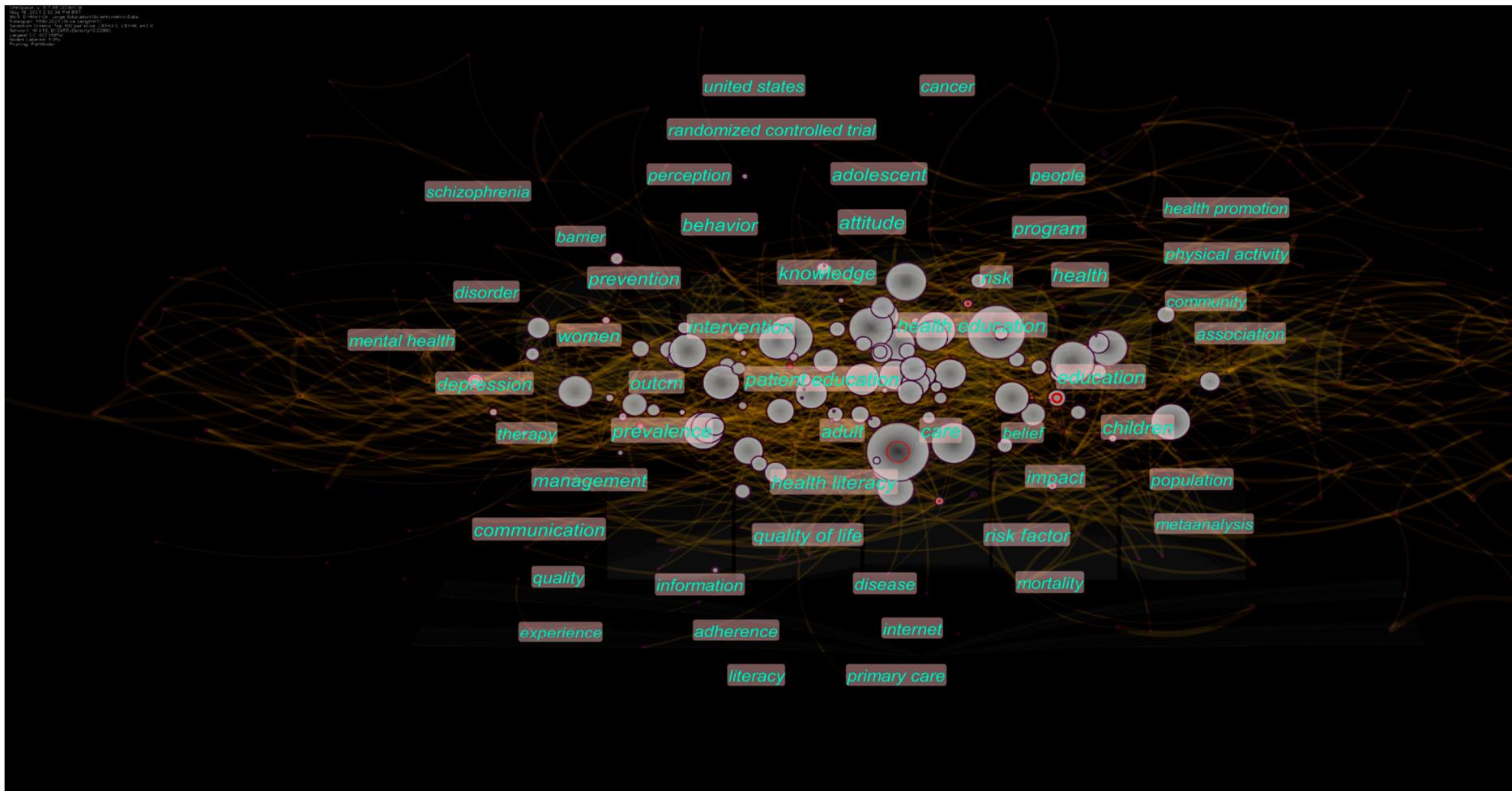
Supplementary Figure S2: Collaborative network of countries in patient education research



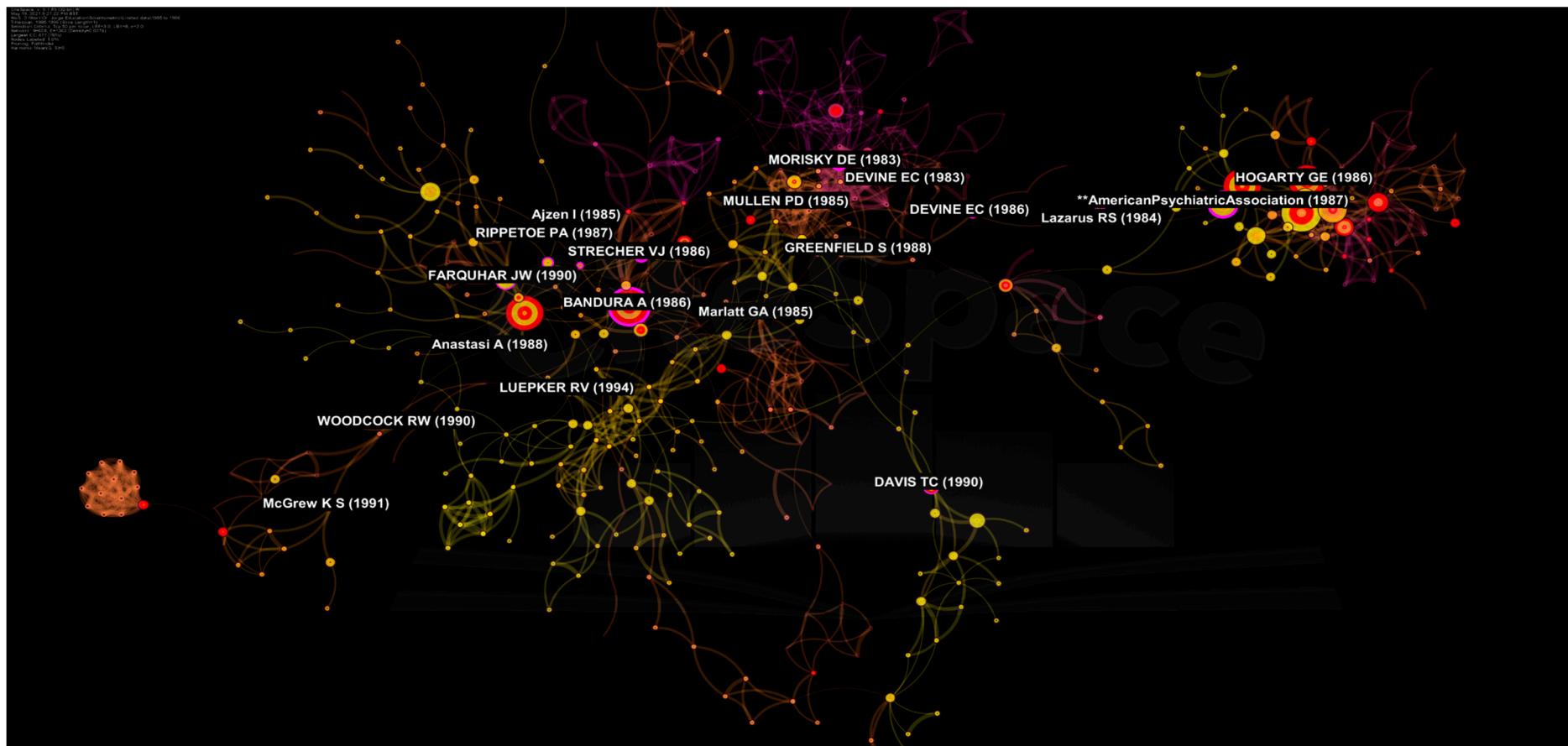
Supplementary Figure S3: Top institutions contributing to patient education research



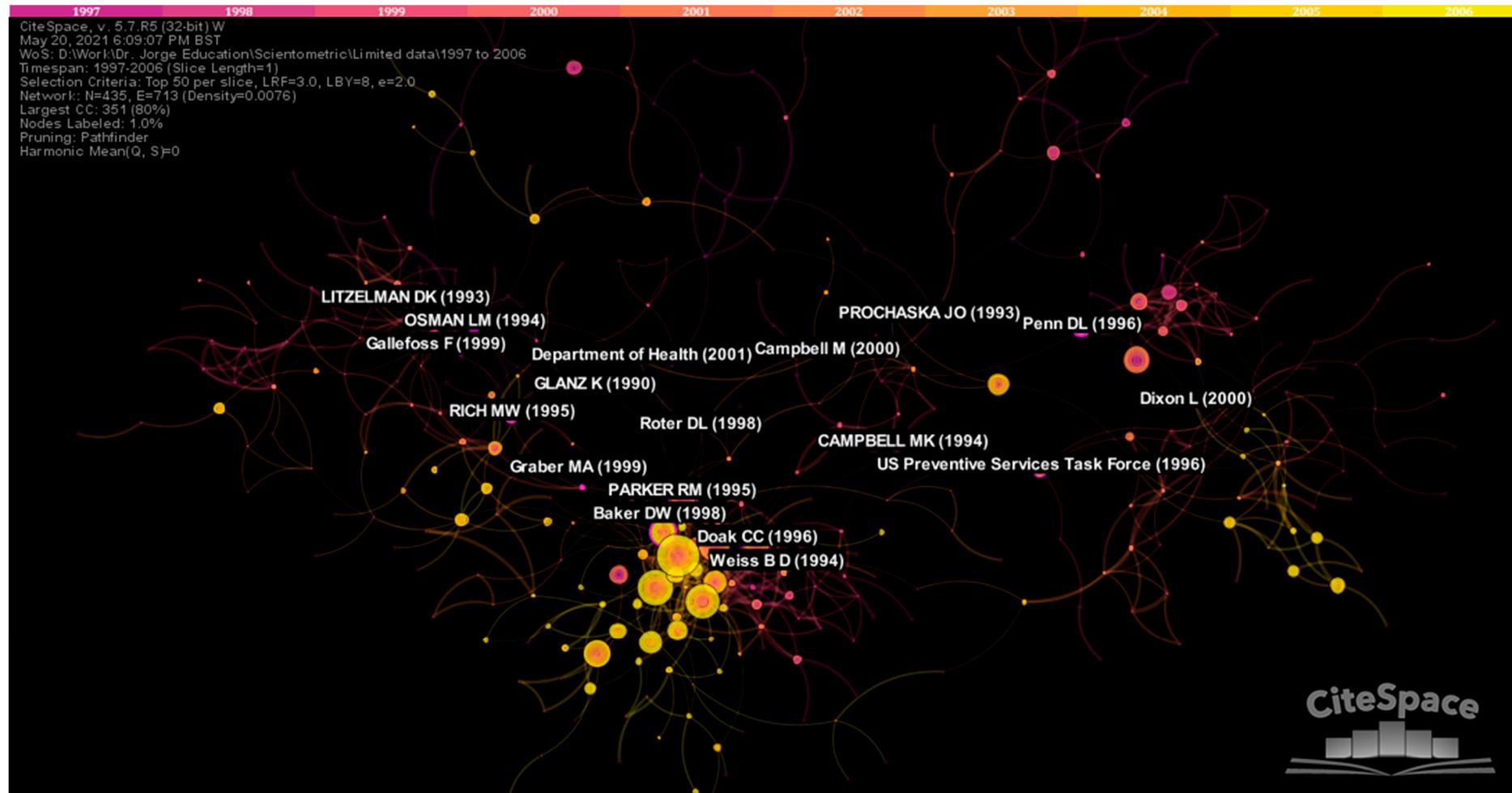
Supplementary Figure S4: Keywords corresponding to central topics in patient education research



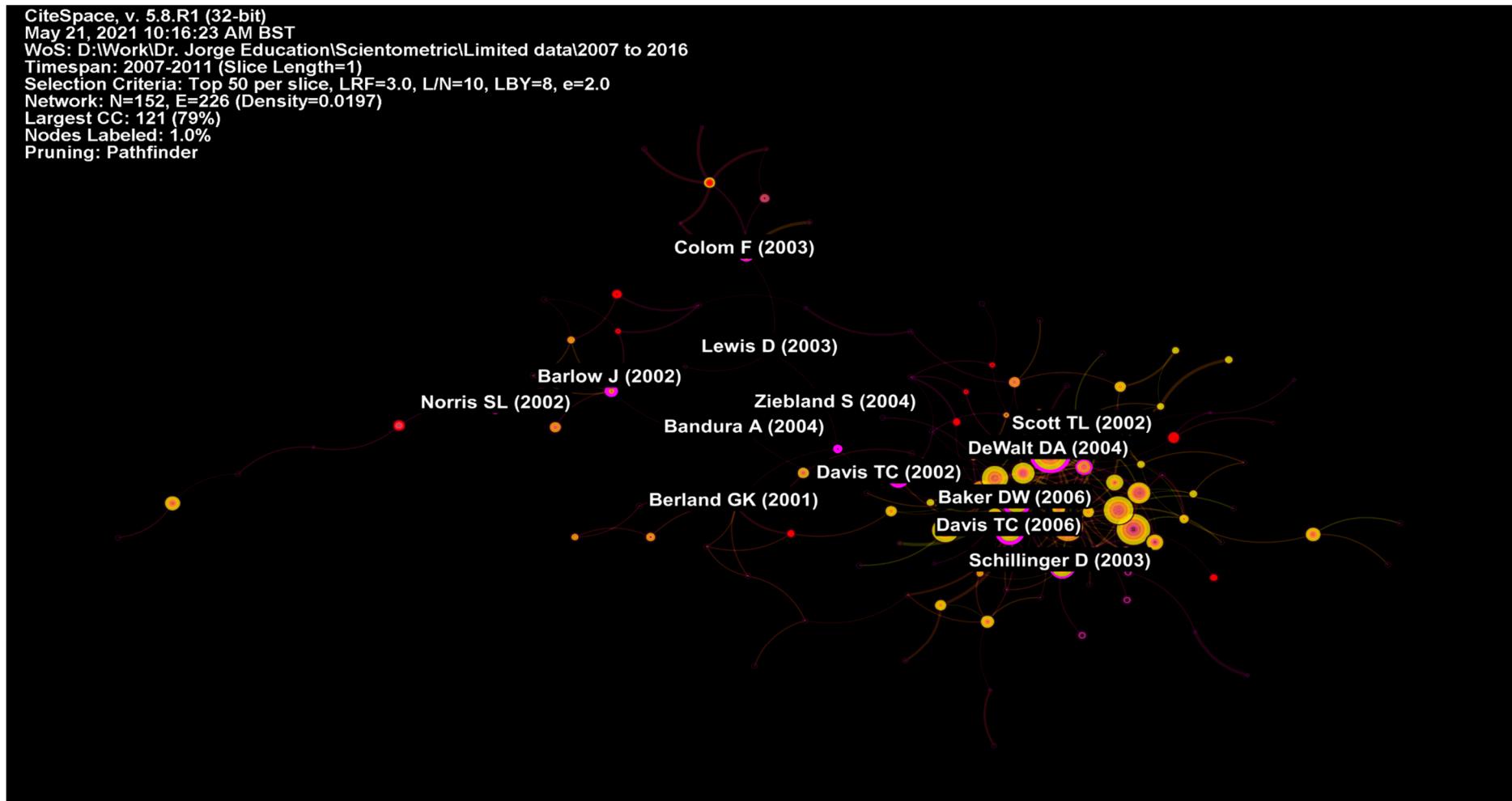
Supplementary Figure S5: Top research articles published from 1985 to 1996



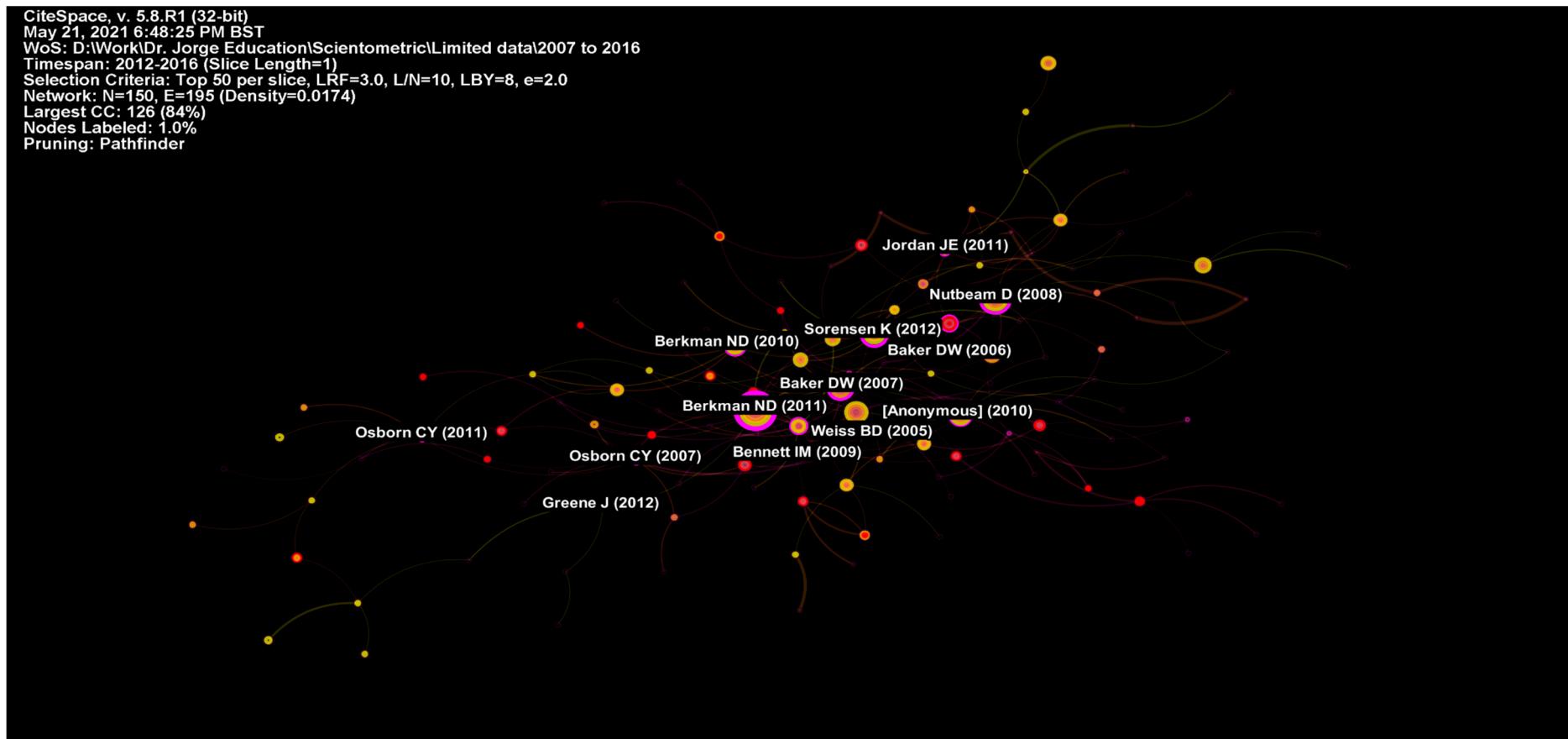
Supplementary Figure S6: Top articles in patient education research from 1997 to 2006



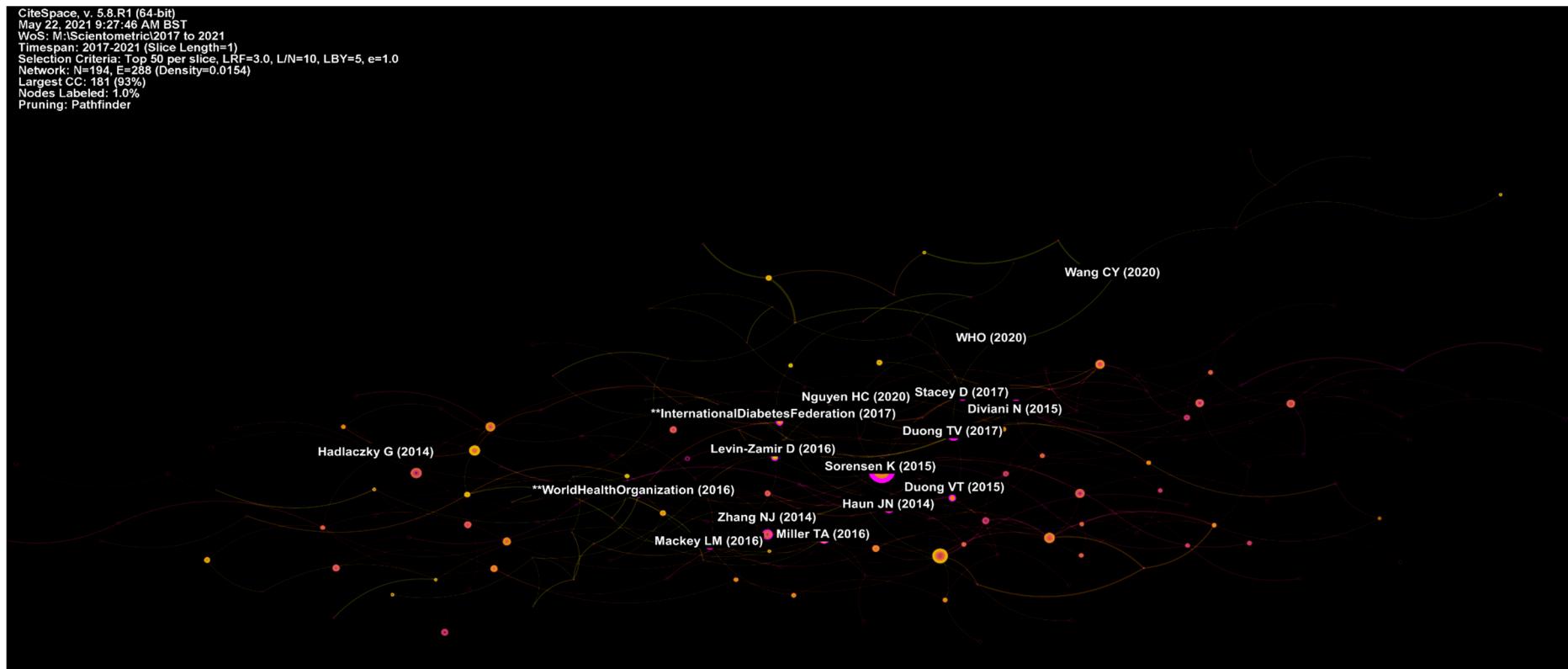
Supplementary Figure S7: Top articles published from 2007 to 2011



Supplementary Figure S8: Top articles published from 2012 to 2016



Supplementary Figure S9: Top articles published from 2017 to 2021



Supplementary Table S1: Top cited keywords in patient education research (>300 citations)

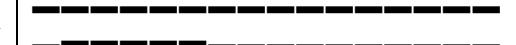
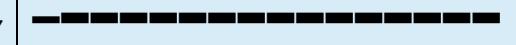
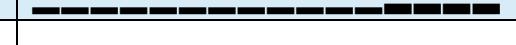
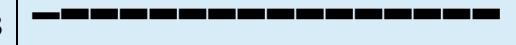
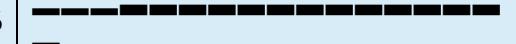
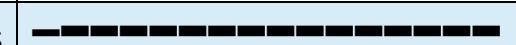
Theme	Keywords
Patient education terms	Literacy, psychoeducation,
Disease/Disorder	Depression, physical activity, cancer, primary care, mental health, schizophrenia, obesity, breast cancer, anxiety, exercise, infection, pregnancy, HIV, mental health literacy, hypertension, oral health, diabetes
Study designs	Implementation programme, RCT, association, barrier, experience, meta-analysis, validation, efficacy, epidemiology, model, trial, questionnaire, service, predictor, validity, qualitative research
Scope	Behavior, communication, information, internet, perception, belief, health promotion, public health, scale development, self-management, guideline, support
Outcomes	Knowledge, education, prevalence, attitude, impact, risk, management, prevention, quality of life, risk factor, adherence, mortality, symptom, diagnosis, health knowledge, awareness, illness, stigma, decision making
Populations	Children, adolescent, women, adult, United States, community, older adult, disparity, patient, student, physician, parent

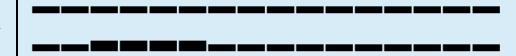
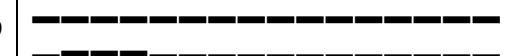
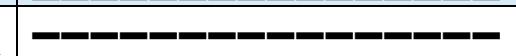
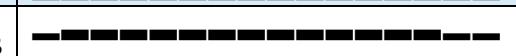
Supplementary Table S2: Top funders contributing to the field of patient education

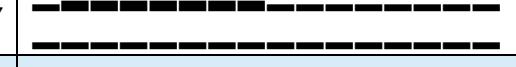
Funding Agencies	Frequency	% of 54533
UNITED STATES DEPARTMENT OF HEALTH HUMAN SERVICES	6881	12.618
NATIONAL INSTITUTES OF HEALTH NIH USA	6139	11.257
NIH NATIONAL CANCER INSTITUTE NCI	1196	2.193
EUROPEAN COMMISSION	1154	2.116
NIH NATIONAL INSTITUTE OF MENTAL HEALTH NIMH	781	1.432
NIH NATIONAL HEART LUNG BLOOD INSTITUTE NHLBI	748	1.372
NIH NATIONAL CENTER FOR ADVANCING TRANSLATIONAL SCIENCES NCATS	700	1.284
NIH NATIONAL INSTITUTE OF DIABETES DIGESTIVE KIDNEY DISEASES NIDDK	591	1.084
NIH NATIONAL INSTITUTE ON AGING NIA	574	1.053
NATIONAL HEALTH AND MEDICAL RESEARCH COUNCIL OF AUSTRALIA	546	1.001
NIH EUNICE KENNEDY SHRIVER NATIONAL INSTITUTE OF CHILD HEALTH HUMAN DEVELOPMENT NICHD	539	0.988
NIH NATIONAL CENTER FOR RESEARCH RESOURCES NCRR	476	0.873
CANADIAN INSTITUTES OF HEALTH RESEARCH CIHR	468	0.858
AGENCY FOR HEALTHCARE RESEARCH QUALITY	456	0.836
NIH NATIONAL INSTITUTE OF NURSING RESEARCH NINR	411	0.754
UK RESEARCH INNOVATION UKRI	392	0.719
CENTERS FOR DISEASE CONTROL PREVENTION USA	370	0.678
NATIONAL NATURAL SCIENCE FOUNDATION OF CHINA NSFC	370	0.678
NIH NATIONAL INSTITUTE ON DRUG ABUSE NIDA	362	0.664
MEDICAL RESEARCH COUNCIL UK MRC	311	0.57
NIH NATIONAL INSTITUTE ON MINORITY HEALTH HEALTH DISPARITIES NIMHD	299	0.548
MINISTRY OF EDUCATION CULTURE SPORTS SCIENCE AND TECHNOLOGY JAPAN MEXT	289	0.53
NATIONAL INSTITUTE FOR HEALTH RESEARCH NIHR	269	0.493
UNITED STATES PUBLIC HEALTH SERVICE	264	0.484
JAPAN SOCIETY FOR THE PROMOTION OF SCIENCE	247	0.453

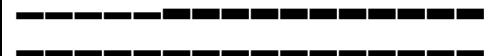
Supplementary Table S3: Top keywords presented as citation bursts

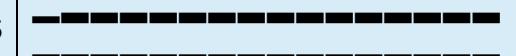
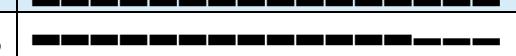
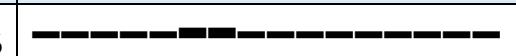
Keywords	Year	Strength	Begin	End	1990 - 2021
controlled trial	1990	129.93	1991	2009	
patient education	1990	106.52	1995	2005	
asthma	1990	103.39	1991	2013	
clinical trial	1990	68.8	1994	2011	
follow up	1990	68.55	1991	2013	
comprehension	1990	68.04	2010	2014	
relapse	1990	66.57	1991	2006	
health education	1990	66.33	1990	2000	
stress	1990	62.87	2019	2021	
caregiver	1990	61.6	2018	2021	
mellitus	1990	59.89	1991	2004	
perspective	1990	59.28	2017	2018	
reliability	1990	56.4	2018	2021	
general practice	1990	56.4	1991	2005	
blood pressure	1990	53.05	1991	2008	
burden	1990	52.61	2016	2017	
promotion	1990	51.97	1991	2005	
rheumatoid arthriti	1990	48.38	1992	2003	
skill	1990	47.75	2010	2013	
morbidity	1990	47.54	1991	2005	
stigma	1990	47.39	2016	2021	

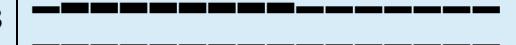
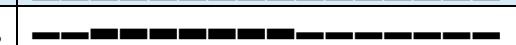
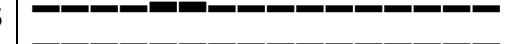
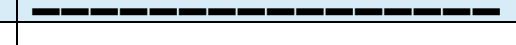
medication	1990	46.74	2007	2011	
pattern	1990	46.38	1991	2007	
smoking cessation	1990	45.33	1994	2006	
nursing	1990	45.2	2018	2021	
mental health	1990	44.63	2019	2021	
qualitative research	1990	42.43	2018	2021	
compliance	1990	42.29	1991	2007	
trial	1990	40.89	1991	2008	
life	1990	40.51	2019	2021	
youth	1990	40.17	2019	2021	
expressed emotion	1990	39.81	1991	2003	
rehabilitation	1990	39.48	2011	2014	
oral health	1990	39.24	2014	2018	
disability	1990	37.9	1993	2006	
survival	1990	37.13	1991	2008	
patienteducation	1990	35.98	1991	2005	
chronic disease	1990	35.04	2015	2016	
validation	1990	34.88	2019	2021	
alcohol	1990	34.6	1991	2006	
diabete	1990	31.4	2015	2017	
arthriti	1990	30.51	1991	2002	
trend	1990	30.32	1992	2007	
functional health literacy	1990	29.74	2005	2007	

men	1990	29.42	2008	2011	
nurse	1990	29.37	2007	2009	
determinant	1990	28.73	2014	2015	
diabetes mellitus	1990	28.53	1995	2007	
social support	1990	27.38	2018	2021	
decision making	1990	25.99	2015	2018	
glycemic control	1990	25.71	2003	2009	
mental health literacy	1990	24.88	2018	2021	
cigarette smoking	1990	23.95	1992	1998	
satisfaction	1990	23.27	2018	2021	
maintenance chemotherapy	1990	22.78	1993	1998	
aftercare treatment	1990	22.78	1993	1998	
metaanalysis	1990	22.27	2017	2018	
system	1990	21.58	1992	2007	
drug	1990	21.18	1991	1998	
childhood	1990	21.07	1991	2003	
cardiovascular disease	1990	20.76	2005	2008	
coronary heart disease	1990	20.72	2005	2007	
gender	1990	20.04	2009	2011	
hiv infection	1990	20.02	1992	2000	
health information	1990	19.95	2001	2008	
african american	1990	19.56	2013	2014	
strategy	1990	18.94	2018	2019	

physician	1990	18.85	1992	2005	
pain	1990	18.58	2013	2014	
cholesterol	1990	18.22	1991	1997	
psychotherapy	1990	17.6	2004	2007	
mother	1990	17.56	1991	2006	
awareness	1990	17.47	2018	2019	
children	1990	17.26	1995	1998	
adjustment	1990	17	1993	2002	
schizophrenic patient	1990	16.54	1992	1999	
self-management	1990	16.5	2018	2021	
randomized trial	1990	15.92	2013	2014	
family psychoeducation	1990	15.83	1991	1996	
access	1990	15.69	2008	2009	
health behavior	1990	15.39	1991	2004	
smoking	1990	15.08	2009	2010	
aid	1990	14.9	2007	2008	
diet	1990	14.76	1991	1998	
school	1990	14.26	1992	2000	
transmission	1990	14.08	1991	2000	
need	1990	13.91	2001	2003	
randomized controlled trial	1990	13.9	2006	2007	
complication	1990	13.81	1991	2005	
illness	1990	13.57	2001	2006	

elderly patient	1990	13.37	1999	2003	
age	1990	13.07	2005	2006	
africa	1990	13.01	1991	1997	
project	1990	12.95	1995	2004	
myocardial infarction	1990	12.93	1992	1998	
participation	1990	12.83	2002	2007	
family	1990	12.74	2009	2010	
issue	1990	12.57	1995	2005	
medication adherence	1990	12.54	2019	2021	
mammography	1990	12.54	1991	2004	
prevention	1990	12.39	1994	1997	
nigeria	1990	12.29	1991	2003	
self efficacy	1990	12.24	1995	1998	
hypertension	1990	12.17	2011	2013	
human immunodeficiency virus	1990	12.01	1991	1995	
primary health care	1990	11.88	1992	2000	
surgery	1990	11.51	2005	2007	
relative	1990	11.12	1991	2003	
readability	1990	10.89	2017	2018	
cost	1990	10.85	2005	2007	
emergency	1990	10.79	1998	1999	
world wide web	1990	10.73	2000	2004	
developing country	1990	10.4	1994	2002	

therapy	1990	9.99	1996	2000	
health status	1990	9.94	1991	2005	
infant	1990	9.89	1991	1996	
medical care	1990	9.76	1991	1997	
medicine	1990	9.41	1999	2000	
heart disease	1990	9.17	1992	1997	
exposure	1990	9.12	1991	2004	
education program	1990	8.85	1997	2002	
empowerment	1990	8.79	1995	2001	
maintenance	1990	8.73	1992	1995	
sexually transmitted disease	1990	8.53	1991	2001	
social cla	1990	8.46	1991	1997	
dental cary	1990	8.37	1990	2002	
program	1990	8.03	1999	2000	
informed consent	1990	8.01	1996	1998	
infection	1990	7.86	2010	2011	
mass media	1990	7.86	1992	1997	
consumption	1990	7.67	1992	2003	
treatment	1990	7.46	1995	1996	
belief	1990	7.27	2009	2011	
coping	1990	7.25	1995	2003	
malignant melanoma	1990	7.16	1995	1999	
performance	1990	7.15	2001	2004	

reduction	1990	7.06	1991	1998	
guideline	1990	7	2012	2014	
psychoeducation	1990	6.8	2006	2007	
preference	1990	6.79	1995	2002	
meta analysis	1990	6.69	1995	1997	
smoker	1990	6.63	1992	2002	
diarrhea	1990	6.59	1991	1996	
general practitioner	1990	5.98	1994	1997	
self care	1990	5.94	1993	2003	
childhood asthma	1990	5.82	1992	1998	
cary	1990	5.39	1991	1994	
evaluation	1990	5.36	1992	1997	
hospitalization	1990	4.76	1991	1993	
mortality	1990	4.72	1994	1995	
schoolchildren	1990	4.7	1992	1995	
immunization	1990	4.65	1992	1996	
behavioral intervention	1990	4.65	1992	1996	
sexual behavior	1990	4.55	1991	1997	
symptom	1990	4.49	2002	2003	
schizophrenia	1990	4.21	1996	1998	
aftercare	1990	4.1	1993	1994	
adolescence	1990	4.1	1993	1994	
low birth weight	1990	4.07	1992	1994	

recommendation	1990	3.88	1992	1993	
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Supplementary Table S4: References yielding high centrality values in patient education research from 1922 to 2020.

Pre 1985
Farquhar J, Wood P, Breitrose H, Haskell W, Meyer A, Maccoby N, Alexander J, Brown JR B, Mcalister A, Nash J, Stern M. Community education for cardiovascular health. <i>The Lancet</i> . 1977 Jun 4;309(8023):1192-5.
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<p>2007 to 2011</p>
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