



An Analysis of U54 Partnerships to Advance Cancer Health Equity (PACHE) Publications

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Abstract

Using document review, we identified 963 publicly accessible NIH RePORT publications across the 16 funded U54 Partnerships to Advance Cancer Health Equity (PACHE) center programs. Using the 868 publications that met criteria, we determined the frequency of publications across the funded PACHE programs by longevity; reported the frequency of studies focused on cancer health disparities; determined the proportion of institutions serving underserved health disparity populations, underrepresented students (ISUPS), and co- and lead-authored works; and categorized the scope of studies by commonalities in their reported purposes. The study findings showed that (1) center longevity was not necessarily related to the number of publications; (2) less than 20% of studies focused on cancer health disparities (CHD); (3) ISUPU co-authors appeared in 72% of publications, while lead authors were 48%; (4) 6.07% publications focused on cancer diagnosis, screening, treatment, and risk factors; 57.5% studies were mechanistic; 21.53% focused on the impact of interventions on health promotion, prevention, and quality of life; 5.62% studies were related to educational outcomes; and 9.28% studies were classified as epidemiological/survey outcomes. One of the primary purposes of PACHE centers is CHD research. Thus, we advocate increasing the frequency of CHD-focused publications. We suggest increasing the number of ISUPU lead-authored papers. To align with the PACHE mission, we also recommend increasing the number of studies focused on cancer diagnosis, screening, treatment, and risk factors and the impact of interventions on health promotion, prevention, and quality of life. To demonstrate the effectiveness and impact of training, increasing the number of educational outcome studies is also proposed.

Keywords Partnerships to Advance Cancer Health Equity · U54 · Scoping review · Cancer health disparities research · NIH RePORT · Publications

Introduction

The purpose of the U54 Partnerships to Advance Cancer Health Equity (PACHE) mechanism is to develop and maintain comprehensive, long-term, and mutually beneficial

partnerships between institutions serving underserved health disparity populations, underrepresented students (ISUPSs), and national cancer institution (NCI)-designated cancer centers. The intent of partnership programs is to foster and support collaborations to develop stronger cancer programs that promote an understanding of how cancer health disparities disproportionately affect racial and ethnic minorities and socioeconomically disadvantaged populations. Partnership institutions are expected to (1) increase the cancer research and cancer research education capacity of ISUPSs; (2) increase the number of underrepresented minority (URM) students and investigators engaged in cancer research; (3) improve cancer center effectiveness in developing and sustaining research programs focused on cancer health disparities; (4) increase the number of investigators and students conducting cancer health disparities research; and (5) develop and implement cancer-related activities that benefit the surrounding underserved communities [1]. What is known about the impact of PACHE can be assessed through varied evaluative methods.

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Describing the scope of center publications also offers one type of insight. With that idea, and based on Behar-Horenstein, Horenstein and Richey’s research [2], we conducted a scoping review of all publications available in NIH RePORT across the funded PACHE centers [2].

As required by the National Institute of Health (NIH), annual self-evaluation is conducted through the submission of progress reports from the individual projects under the program funding mechanism. Each program monitors and reports the degree to which they have attained proposed objectives. Researchers may assess the quality of programs using outcome measures or evidence of impact. Program outcome measures may include (1) reporting the publications co-authors by trainees and mentors; (2) reporting the number of trainees who matriculate, continue in academic cancer-related research careers, or co-author publications, (3) specifying the number and list of presentations/meetings that include trainees; (4) reporting the number of program graduates who receive R01 or career development awards; or (5) documenting the number who hold positions as professors or leadership roles on NCI committees; or (6) describing the quality of mentoring, among others. Concordant with evaluation metrics focused on scholarly work, the purposes of this study were to utilize the collective set of PACHE publications to (1) determine the frequency of publications by longevity across funded programs; (2) report the frequency of studies focused on cancer health disparities; (3) determine the proportion of ISUPS co-authors; (4) determine the proportion of ISUPS lead authors; and (5) categorize the scope of studies by commonalities in their reported purposes.

Methods

Using secondary data from the NIH RePORT, we conducted a document review of all publications that were produced across the funded U54 PACHE centers as of July 2019 (Fig. 1).

Overall, the 16 PACHE programs produced 963 publications (see Table 1), ranging from 5 to 145. Criteria for inclusion were evidence-based studies that presented quantitative or qualitative results and also included a statement of purpose, an overview of methods and results, and a discussion/conclusion section. Papers that did not meet inclusion criteria such as position papers and duplications were excluded from this review. This database was developed during the third week of July 2019. Thus, it is limited solely to those publications that were accessible on the NIH Research Portfolio Online Reporting Tools (RePORT) [3].

The second author compiled the database. Next, the first and third authors read each of the 963 articles. We created a spreadsheet and listed each publication by each institution within the center (see Appendix A). We identified the ISUPU institutions (see Table 1). To determine if a publication was focused on cancer health disparities (CHD), first we did a keyword search for “cancer” and “health disparities” or “cancer health disparities.” Articles that listed these keywords were classified as CHD. As a validation check, next we reviewed each article; read the abstract, introduction, discussion, and conclusion; and searched for the following keywords: “cancer” and “health disparities,” “cancer health disparities” or “minority” or “minorities.” If an article did not mention cancer health disparities but was clearly focused on cancer and the health of a specific minority population, then we counted it as a cancer health disparities article. We reviewed the list of authors within each publication and noted whether each name was or was not affiliated with an ISUPS. We recorded the frequency of ISUPS first or co-first authors and the year of publication for each center. We recorded the frequency of ISUPS lead authors and year of publication for each center. Next, we reviewed the study purpose of each publications and developed brief descriptions of its purpose, which were identified as an initial category. Next, we reviewed those initial categories, to sort, group, and classify

Fig. 1 Process of article identification

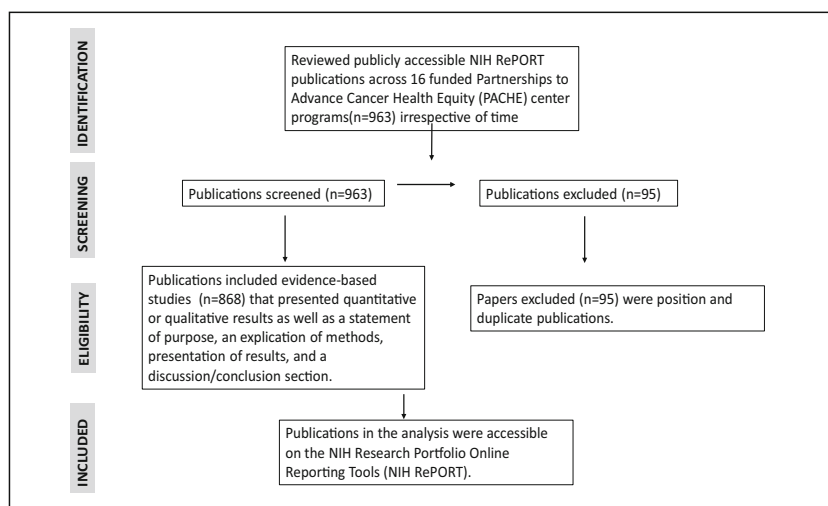


Table 1 NIH RePORT publications by center, longevity, cancer health disparities, and ISUPS co- and lead authors by n/% of initial and final database

Center institutions	Longevity: when funding commenced/# years	# initial pubs ^a /# final pubs ^b /average pubs per year ^b	% of initial database ^a /% of final database ^b	n/% of CHD ^b	n/% ISUPS co-author ^b	n/% ISUPS lead author ^b
1. Arizona CC (CA143924)/Northern Arizona University (CA143925) ^c	Sept 2009; 11 years	36/30 2.73	3.74/3.46	7/04	19/03	11/03
2. San Diego State (CA132384 ^c)/UC San Diego Moores CC (CA132379)	Sept 2008; 12 years	57/51 4.25	5.92/5.88	29/17	48/08	38/09
3. Drew University (CA143931 ^c)/UCLA Jonsomn CC (CA143930)	Sept 2009; 11 years	66/57 5.18	6.85/6.57	9/05	37/06	24/06
4. New Mexico State University Las Cruces (CA132383 ^c)/Fred Hutchinson Cancer Research Center (CA132381)	Sept 2007; 13 years	30/28 2.15	3.12/3.23	7/04	24/04	20/05
5. University of Illinois Chicago (CA202997)/Northeastern Univ (CA202995 ^c)/Northwestern University Lurie CC (CA203000)	Sept 2015; 5 years	82/62 12.40	8.52/7.14	21/13	52/08	25/06
6. U Mass Boston (CA156734 ^c)/Harvard Dana Farber Cancer Institute (CA156732)	Sept 2010; 10 years	51/49 4.90	5.30/5.65	5/03	28/04	17/04
7. City College of NY (CA132378 ^c)/Memorial Sloan Kettering CC (CA137788)	Sept 2008; 12 years	99/92 7.67	10.28/10.60	6/04	45/07	24/06
8. Tennessee State Univ (CA163066 ^c)/Meharry Medical College (CA163069 ^c)/Vanderbilt Ingram CC (CA163072)	Sept 2011; 9 years	125/118 13.22	12.98/13.59	4/02	105/17	75/18
9. Tuskegee University (CA118623 ^c)/Morehouse School of Medicine (CA118638 ^c)/UABCC (CA118948)	Sept 2005; 15 years	145/129 8.73	15.06/14.86	23/14	68/11	40/10
10. Ponce Health Sciences Univ (CA163071 ^c)/Moffitt Cancer Center (CA163068)	Sept 2012; 8 years	62/52 6.50	6.44/5.99	5/03	42/07	30/07
11. University of Puerto Rico CC (CA96297 ^c)/MD Anderson (CA96300)	Aug 2002; 18 years	101/96 5.33	10.49/11.06	33/20	92/15	72/17
12. North Carolina Central Univ (CA156735 ^c)/UNC Lineberger CC (CA156733)	Sept 2010; 10 years	61/58 5.80	6.33/6.68	11/07	37/06	25/06
13. South Carolina State Univ (CA210963 ^c)/Medical University of SC Hollings CC (CA210962)	Sept 2017; 3 years	8/7 2.33	.83/.81	1/01	0/0	0/0
14. University of Guam (CA143728 ^c)/University of Hawaii CC (CA143727)	Sept 2009; 11 years	28/27 2.45	2.91/3.11	5/03	18/03	10/02
15. Temple Univ Fox Chase CCC (CA221705)/Hunter College (CA221704 ^c)	Sept 2018; 2 years	7/7/1 3.50	.73/.81	0/0	7/01	4/01
16. Florida A&M Univ (CA233396 ^c)/Univ Florida (CA233444)/Univ Southern California (CA233465)	Sept 2018; 2 years	5/5/ 2.50	.52/.58	1/01	2/00	0/0

^a Denotes initial set of 963 publications

^b Denotes n/% following deletions, based on 868 publications

^c Denotes ISUPS

Table 2 Initial and final publication categories

Initial category	Final category
Assessment of team efficacy	Cancer diagnosis, screening, treatment, and risk factor
Assessment of cancer treatment efficacy	Cancer diagnosis, screening, treatment, and risk factor
Biomarkers and diagnosis	Cancer diagnosis, screening, treatment, and risk factor
Cancer diagnosis and radiologic tools	Cancer diagnosis, screening, treatment, and risk factor
Cancer screening	Cancer diagnosis, screening, treatment, and risk factor
Case-control cohort study	Epidemiological/survey outcomes
Instrument development	Epidemiological/survey outcomes
Intervention with cancer survivors	Impact of interventions on health promotion, prevention, and quality of life
Biological basis for cancer, cell proliferation	Mechanistic
Psycho-social factors, biology, and cancer survival	Impact of interventions on health promotion, prevention, and quality of life
Psycho-social factors and cancer survival	Impact of interventions on health promotion, prevention, and quality of life
Psycho-social factors and suicidality	Impact of interventions on health promotion, prevention, and quality of life
Psycho-social factors, intervention, and cancer survival	Impact of interventions on health promotion, prevention, and quality of life
Effectiveness and career outcomes among training program participants	Educational outcomes
Assessment of educational materials and interventions	Educational outcomes
Tumor pathology studies	Mechanistic

articles by commonalities in their purpose, which were designated as the final categories (see Table 2).

For example, articles focused on biomarkers and diagnosis, cancer diagnosis and radiologic tools, cancer treatment, or cancer screening were classified as cancer diagnosis, screening, treatment, and risk factor. Studies focused on the biological basis for cancer, cell proliferation were designated as mechanistic. Studies in which the focus was psycho-social factors, biology, and cancer survival, psycho-social factors and cancer survival, psycho-social factors and suicidality, or psycho-social factors, intervention, and cancer survival were classified as impact of interventions on health promotion, prevention, and quality of life. Case-control cohort studies or publications in which instrument development was the focus were designated as epidemiological/survey outcomes. Studies in which the effectiveness of training and program impact were described were classified as Educational outcomes. Conceptual definitions for each category were developed (see Table 3).

Results

In this section, we report the number of publications by center longevity, the frequency of cancer health disparities studies, the proportion of ISUPS co-authored studies, and ISUPS lead-authored studies, and categorization of studies.

Publications by Center Longevity The 16 PACHE programs described in this study have been funded for 2–18 years, on

average 9.5 years, median 10.5, and mode 11. Six centers (University of Illinois Chicago, Northeastern Univ, Northwestern University Lurie CC; Tennessee State Univ, Meharry Medical College, Vanderbilt Ingram CC; Ponce Health Sciences Univ, Moffitt Cancer Center; South Carolina State Univ, Medical University of SC Hollings CC; Temple Univ Fox Chase CCC, Hunter College; and Florida A&M Univ, Univ Florida, Univ Southern California) have been funded for less than 10 years, while the remainder (Arizona CC, Northern Arizona University; San Diego State, UC San Diego Moores CC; Drew University, UCLA Jonsson CC; New Mexico State University Las Cruces, Fred Hutchinson Cancer Research Center; U Mass Boston, Harvard Dana Farber Cancer Institute; City College of NY, Memorial Sloan Kettering CC; Tuskegee University, Morehouse School of Medicine, UABCC; University of Puerto Rico CC, MD Anderson; North Carolina Central Univ, UNC Lineberger CC; and University of Guam, University of Hawaii CC) has been funded for 10 or more years.

The total number of publications across centers ranged from 5 to 145, while the average number of publications per year ranged from 2.5 to 12.4 (see Table 1; see Fig. 2). Three partnerships (Tennessee State University/Meharry Medical College/Vanderbilt Ingram CC, 9 years; Tuskegee University/Morehouse School of Medicine/UABCC, 15 years; and University of Illinois Chicago/Northeastern Univ/Northwestern University Lurie CC, 5 years) averaged more than 10 publications per year irrespective of longevity, with 13.22, 8.73, and 12.40, respectively.

Table 3 Categories and conceptual themes by frequency^a

Categories	Conceptual themes		Representative publications
Cancer diagnosis, screening, treatment, and risk factor	<ul style="list-style-type: none"> • Determined effectiveness of teamwork or cancer treatment efficacy; • Identified radiologic tools, biomarkers, and diagnosis; • Identified risks associated with developing cancer 	53/6.07%	<p>Sexton et al. (2018) Anticipation, teamwork and cognitive load: chasing efficiency during robot-assisted surgery</p> <p>Fumi Sato-Kaneko et al., (2017) Combination immunotherapy suppression of head, neck cancer</p> <p>Previs et al. (2015) Dual Metronomic Chemotherapy with Nab-Paclitaxel and Topotecan Has Potent Antiangiogenic Activity in Ovarian Cancer</p> <p>Wang et al., (2017) Arctigenin inhibits prostate tumor cell growth in vitro and in vivo.</p> <p>Borg et al., (2019) Photophysical and Photoacoustic Properties of π-Extended Curcumin Dyes</p> <p>Harris et al., (2016) Western diet enhances benzo(a)pyrene-induced colon tumorigenesis in a polyposis in rat coli (PIRC) rat model of colon cancer.</p> <p>Williams et al., (2017) Human alpha defensin 5 is a candidate biomarker to delineate inflammatory bowel disease</p> <p>Floyd et al., (2017) the development of a salon-based, stylist-delivered intervention to promote colonoscopy screening among African American women.</p> <p>Williams et al. (2016) Alcohol intake and invasive breast cancer risk by molecular subtype and race in the Carolina Breast Cancer Study</p>
Mechanistic	<ul style="list-style-type: none"> • Explored various mechanisms relating to the biological aspects of cancer, novel treatments, and cell proliferation 	502/57.5%	<p>Lozana-Pope et al., (2017) Effect of myeloid differentiation primary response gene 88 on expression profiles of genes during the development and progression of Helicobacter-induced gastric cancer.</p> <p>Basa et al., (2016) Decreased Anti-Tumor Cytotoxic Immunity among Microsatellite-Stable Colon Cancers from African Americans.</p> <p>J Encarnación-Medina et al., (2019) MicroRNA Expression Changes in Women with Breast Cancer Stratified by DNA Repair Capacity Levels.</p>
Impact of interventions on health promotion, prevention, and quality of life	<ul style="list-style-type: none"> • Explored the effect of psychosocial factors and interventions on cancer survival; • Measured impact of behavioral interventions towards health promotion, vaccine practices, and prevention; • Measured screening attitudes; • Assessed care seeking experiences 	188/21.53%	<p>Bea et al. (2019) Physical Activity among Navajo Cancer Survivors: A Qualitative Study.</p> <p>Castro et al., (2017) Importance of and Satisfaction with Psychosocial Support among Cancer Patients and Survivors in Puerto Rico: Gender, Health Status, and Quality of Life Associations.</p> <p>Colon-Lopez et al., (2015) HPV Awareness and Vaccine Willingness Among Dominican Immigrant Parents Attending a Federal Qualified Health Clinic in Puerto Rico.</p> <p>Calo et al., (2015) Exploring the role of ethnic identity on the attitudes towards HPV vaccine advertising among Puerto Ricans: a qualitative analysis.</p>
Educational outcomes	<ul style="list-style-type: none"> • Explored effectiveness and career outcomes among training program participants; • Assessed educational materials and interventions 	49/5.62%	<p>Laurila et al., (2015) Weaving the Web: Evaluation Strategies to Help Native-American Undergraduate Research Training Programs Navigate Students to Success.</p> <p>Medina et al., (2015) Training and capacity building evaluation: Maximizing resources and results with Success Case Method.</p> <p>YM Rivera et al., (2018) Developing Sustainable Cancer Education Programs: Training Public Health Students to Deliver Cancer 101 in Puerto Rico.</p> <p>MJ Balboni et al., (2015) Religion, Spirituality, and the Hidden Curriculum: Medical Student and Faculty Reflections.</p>

Table 3 (continued)

Categories	Conceptual themes	Representative publications
Epidemiological/survey outcomes	<ul style="list-style-type: none"> • Compared outcomes of differing groups with casual attributes; • Measured behaviors, attitudes, and experiences 	Ponte et al., (2015) A new model for postdoctoral training: the Nursing Postdoctoral Program in Cancer and Health Disparities. Campbell et al., (2017) Addiction Research Training Programs: Four Case Studies and Recommendations for Evaluation. Behar-Horenstein et al., (2020) (unpublished manuscript). Benefits of cancer research education Liu et al., (2019) Differences in Pancreatic Cancer Incidence Rates and Temporal Trends Across Asian Subpopulations in California (1988–2015) Spratt et al., (2016) Racial/Ethnic Disparities in Genomic Sequencing.

Other centers with funding of 10 or more years (Arizona CC/Northern Arizona University, 11 years; San Diego State/UC San Diego Moores CC, 12 years; Drew University/UCLA Jonsonn, 11 years; New Mexico State University Las Cruces/Fred Hutchinson Cancer Research Center, 13 years; U Mass Boston/Harvard Dana Farber Cancer Institute, 10 years; City College of NY/Memorial Sloan Kettering CC, 12 years; University of Puerto Rico /MD Anderson, 18 years; North Carolina Central Univ/UNC Lineberger CC, 10 years; and University of Guam/University of Hawaii CC, 11 years, annually averaged 2.73, 4.25, 5.18, 2.15, 4.90, 7.67, 5.33, 5.80, and 2.45 publications, respectively. One other center with funding between five and less than 10 years (Ponce Health Sciences Univ/Moffitt Cancer Center, 8 years) averaged 6.50 publications per year. Centers with less than 5 years of funding (South Carolina State Univ/Medical University of SC Hollings CC, 3 years; Temple Univ Fox Chase CC/Hunter College, 2 years; Florida A&M Univ/Univ Florida/

Univ Southern California, 2 years) published 2.33, 3.50, and 2.50 papers, respectively.

Cancer Health Disparities Studies Overall, 167 (19%) of studies focused on cancer health disparities (see Table 1).

ISUPS Co-authors Six hundred twenty-four (72%) of the publications included an ISUPS co-author (see Table 1). Center 8 and 10 had the largest number of ISUPS co-authors. Looking at frequency by year, the largest number of co-authored publications occurred in 2017 (149), 2018 (142), 2016 (124), 2015 (111), and 2019 (88) (see Fig. 3).

ISUPS Lead Authors ISUPS lead authors were seen in 415 (48%) of the publications. (see Table 1). Looking at frequency by year, the largest number of lead-authored publications occurred in 2017 (100), 2018 (89), 2015 (79), 2016 (76), and 2019 (66) (see Fig. 4).

Fig. 2 Average number of publications by longevity across PACHE center #

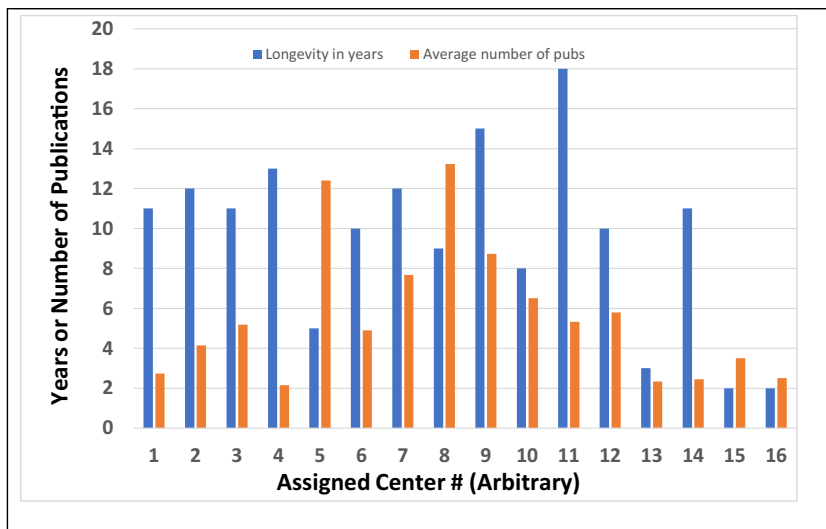
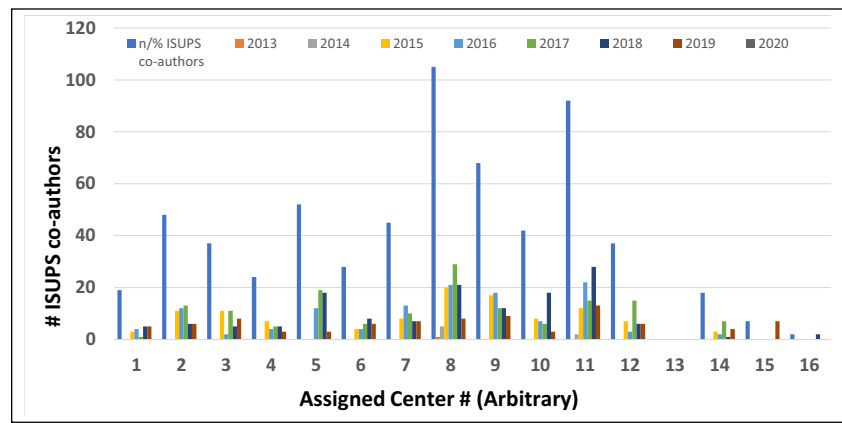


Fig. 3 Number of ISUPS co-authors by year and center #



Categorization of the Studies Categories and conceptual themes along with corresponding representative publications are shown in Table 3. The focus of 53 publications (6.07%) was on (cancer diagnosis, screening, treatment, and risk factors). Purposes of publications in this category included the effectiveness of teamwork or treatment efficacy, radiologic tools, biomarkers, and diagnosis or risks associated with developing cancer. Five hundred and two (57.5%) studies focused on mechanisms relating to the biological aspects of cancer, novel treatments, and cell proliferation and were designated as mechanistic. One hundred and eighty-eight (21.53%) focused broadly on the impact of interventions on health promotion, prevention, and quality of life. In these studies, researchers explored the effect of psychosocial factors and interventions on cancer survival; measured the impact of behavioral interventions towards health promotion, vaccine practices, and prevention; measured screening attitudes; and assessed care-seeking experiences. Forty-nine (5.62%) studies were related to educational outcomes. Researchers in these studies explored the effectiveness and career outcomes among training program participants or assessed educational materials and interventions. The remaining 81 (9.28%) studies were classified as epidemiological/survey outcomes. In these studies, researchers reported comparative outcomes among groups by casual

attributes or reported the outcomes of surveys designed to measure behaviors, attitudes, and experiences.

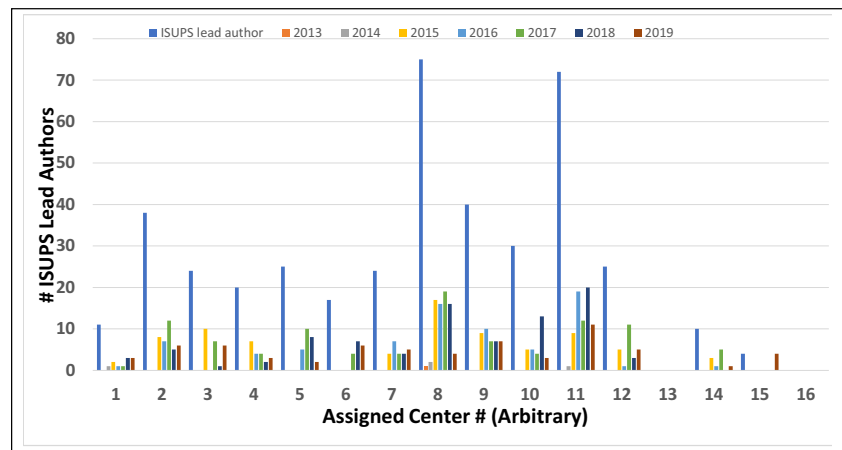
Discussion

In this study, we analyzed 868 evidence-based research publications accessible in NIH RePORT that met criteria and were produced across the 16 funded U54 PACHE programs. Intuitively, it would seem that centers funded for more years would have a proportionately higher number of publications. Our findings suggest that this was not always the case.

Less than one fifth of studies focused on cancer health disparities (CHD). Since the primary purpose of PACHE centers is CHD research, increasing the frequency of CHD-focused publications is advised.

The proportion of papers co-authored by ISUPS investigators was markedly higher, slightly less than three quarters in comparison with papers led by NCI-designated cancer centers, which were less than half. Given that a strong purpose of PACHE centers is to promote research at the ISUPS, the frequency of ISUPS co-authored papers suggests that PACHE is, in part, meeting its goal of supporting ISUPS researchers. The lower proportion of ISUPS first- or co-first authored

Fig. 4 Number of ISUPU lead authored publications by year and center #



papers may suggest a gap in productivity. However, there is a caveat. Although it is expected that PACHE-funded research projects need to focus on cancer health disparities, the same expectation is not true for all underrepresented minority trainees, who may also contribute to center productivity. Per the guidelines of the PACHE centers, some trainees have not worked on cancer health disparities to fulfill the mission of the center. For example, a minority ESI who is a member of a PACHE center may be working on a basic science project, or any other project, not focused on disparities and may cite the center because they received support from it for their career development, yet the paper is not on cancer health disparities. However, if the ESI is publishing and their career advancing, then the PACHE center's mission of increasing the workforce of underrepresented minority scientists is being upheld. In future studies, researchers might wish to explore distinctions between the number of papers led by ESIs in comparison with papers led by PACHE center core/project leaders and explore the number of ESI-led papers who cite the center because they received support from it for their career development, by those papers that were not on cancer health disparities.

We classified studies to offer insight into the types of foci among these publications. The majority of publications were mechanistic. Less than one quarter focused on the impact of interventions on health promotion, prevention, and quality of life; less than one tenth focused on epidemiological/survey outcome studies. Slightly more than one twentieth (1/20) focused on cancer diagnosis, screening, treatment, and risk factors, while even less focused on educational outcomes. To align with the PACHE mission, we suggest increasing the number of studies focused on cancer diagnosis, screening, treatment, and risk factors and the impact of interventions on health promotion, prevention, and quality of life. Findings related to the classification of publications are similar to a previous review conducted using of R25 publications between 2016 and 2019 [2]. Three of the PACHE purposes explicitly focus on cancer research education capacity, increasing the number of URMs engaged in cancer research and improving cancer center effectiveness in developing and sustaining research programs focused on cancer health disparities. Thus, we recommend increasing the number of future studies that focus on the quality and effectiveness of training.

We acknowledge use of NIH RePORT as a limitation since citations potentially discoverable in other databases (i.e., PubMed, Google Scholar), were not utilized. We acknowledge the limitations of a scoping review as it represents a single, albeit indirect, way to assess the impact of the PACHE programs. Also, not all programs were funded for the same number of years. Thus, proportionally some centers have a large number of publications compared with centers that have been funded for less than 5 years. All NIH RePORT publications were included in the database irrespective of the center's funding duration. Cited studies are inclusive through the 3rd

week of July 2019, which is six to 10 weeks before the end of the funding period depending on whether a center's funding begins in August or September. We acknowledge that there is a delay between publication and the paper appearing in NIH RePORT, although the length of delay is beyond the scope of our analyses. We acknowledge rounding up to the next year as study limitation. To avoid biases in interpretation, we encourage the reader to view the results of our study with this in mind. Additionally, in this study, ISUPS "leading" a paper refers exclusively to someone is a first or co-first author. Despite these limitations, study findings revealed important insights.

This paper presents a scoping review focused on evaluating the productivity of U54 PACHE centers, as an indirect way to assess the impact of U54 PACHE programs. The findings offer useful approach to evaluate the impact of this funding program mechanism. Presumably, the audience of this paper are current members of U54 PACHE centers. We postulated that by evaluating manuscript productivity, we could gauge whether the U54 PACHE program is achieving its goal of increasing cancer research and capacity of ISUPS by increasing the pool of investigators conducting cancer health disparities research.

Conclusions

The federal cancer science agency often uses research publications as one indicator for determining scientific progress towards the objectives of funded programs [4]. Determining the merit of cancer-related publications to scientific discoveries can be assessed through varied methods such as bibliometrics, reviews, or quantitative syntheses. Another approach is to describe the nature of a collective body of work is a scoping review. A scoping review is undertaken to systematically identify key concepts or sources of evidence in a body of literature. It can be used to quantify the frequency of work as well as identify commonalities in topics and study purposes. In this study, we report the number of papers co-authored and led by ISUPS investigators in comparison with papers led by NCI-designated cancer centers. We also report whether publications are contributing to cancer health disparities research. The findings showed the gaps in productivity. In the future, researchers wish to use these findings as a baseline to assess changes in the frequency of papers co-authored and led by ISUPS investigators, to determine changes in the number of studies focused on cancer health disparities research studies, and to assess the proportional scope of studies centered on cancer diagnosis, screening, treatment, and risk factors, the impact of interventions on health promotion, prevention, and quality of life, and educational outcomes. Developing an understanding of the type of cancer publications disseminated offers researchers an opportunity to evaluate past scientific progress and to identify prospective projects.

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