HOW SCIENTIFIC PRODUCTION POSITIVELY AFFECT SOCIAL PSYCHOLOGY INTERVENTION? A BIBLIOMETRIC ANALYSIS ON THE SCIENCE OF WELL-BEING

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Abstract

Purpose: The recent decades were witnessed such a rapid rise in wellbeing researches on the field of psychology. Social psychology intervention (SPI) has a strong impact on individual mental health and remarkable achievement in education domain. In this context, subject development within the last years could be illustrated through a bibliometric approach. This research aimed to analyze the scientific productivity while considering global trends of psychological intervention.

Methodology: Web of Science Core Collection databases were selected in the period from 1990 to mid-2018. By thoroughly scrutinizing the objects which came to this attention, the trend of documents, publication date, geographic contribution to the field, relevant authorship and most cited articles, as well as frequent keywords from more than thousand references, were investigated.

Main Findings: The results clearly indicate that the United States of America dedicates itself with the highest level of attention in the area of social psychology intervention. Whereas, lower attention was focused on the research criteria in Asian continent, except China. Although the majority of the studies on SPI approach is from USA, but performed analysis highlight the vast research potential to validate without any specific considerations to certain region settings or cultures.

Implications/Applications: Despite advantages of SPI, the majority of the existed researches has been carried out predominantly in United States. Whereas, from defining the unit of analysis, the hypothesis might worthily be studied by practitioners to generalize the issue over various frameworks.

Keywords: Scientific production, global social-psychology intervention, students, bibliometric approach, most-cited Web of Science articles.

INTRODUCTION

Many scholars and academic associations agree that thus far, research in the fields of psychology and related social sciences has been western-centric (Hendriks et al., 2018). Bibliometric approaches are firmly established as general scientific specialties within an integral part of research in the applied fields. These info metrics methods have been employed for providing quantitative analysis of written publications (Ellegaard & Wallin, 2015). Social psychology interventions (SPI) promise long-term improvement to change many barriers from social and educational inequalities to economic outcomes, political polarity, and intragroup conflict. There is an interaction between the self and social systems which channel individuals into a cycle of behaviours. SPI encourages individuals to face difficult circumstances nondefensively to reach the adaptive potential (Azizam, Ismail, Sulong, Nor, & Ahmed, 2015; Cohen & Sherman, 2014; Yoo, Lee, & Lee, 2016). Several SPI methodologies have been applied to reduce the educational disparities among the candidates. These interventions in education through generating brief exercises of target include students, thoughts, feelings, and beliefs. In this regards, school activities can lead to impact large gains in student's achievements with possibility of inverse influence even months and years later. These interventions do not usually teach the student academic contents but have effects on student's psychology instead and their belief system which resulting to provide improvement acknowledgment of their intelligence in school (Yeager & Walton, 2011a).

The existing literature on academic achievement has produced several high-quality publications focusing on the investigation of SPI research. These criteria are mostly targeted the individual core believes and stereotype threats which usually result in a significant lack of motivation and wellbeing in the academic domain (Aronson, Fried, & Good, 2002; Blackwell, Trzesniewski, & Dweck, 2007; Cohen, Garcia, Purdie-Vaughns, Apfel, & Brzustoski, 2009; Good, Aronson, & Inzlicht, 2003; Harackiewicz, Rozek, Hulleman, & Hyde, 2012; Hulleman & Harackiewicz, 2009; Jamieson, Mendes, Blackstock, & Schmader, 2010; Paunesku et al., 2015; Sylvia, Pidor, Limjuco, & Barluado, 2107; Walton & Cohen, 2011; Yeager & Dweck, 2012). These interventions derive from theory-based experimental resources in laboratories were elaborated to a real academic setting with aim of developing the positive student's individual experiences in a specific educational area (Wilson, 2011). The conduced studies comprise different modules ranging from a simple and very short writing exercise to a stress-reducing meditation program which cooperates toward teamwork activity of the students in the classroom. Besides, the theory is looking forward to decreasing anxiety (Spitzer & Aronson, 2015), levels of stress, symptoms of depression and aggressive feeling and behaviors (Miller, Rudman, Högman, & Gustavsson, 2016; Rerkklang, 2018, Teik & Aman, 2015). In a critical review on interventions targeting skills, behaviors, capacities, and beliefs of students, Bailey et al. briefly mentioned that there are three essential key factors of interventions that must be

accomplished so that the desired outcome will be sustained by the process. These features are mostly referred to development of the skills, establishment of suitable environment during the intervention and finally to either avoid a negative behavior or to seize opportunities in life. From their study, parameters of the procedure were defined as skill-building, sustaining environments and foot-in-the-door. It has been suggested that early childhood interventions produce an impact on achievement, behavior and mental health in adulthood (Yildiz & Kayili, 2015).

The main difference between conventional approaches and developed SPI techniques is referred to their focus points. Traditional approaches concentrate more on the objective features like educational modules, teachers and students benefits and etc., (Fryer, 2011; Thernstrom & Thernstrom, 2004) while, PSI emphasizes on the subjective experiences of academic settings (Spitzer & Aronson, 2015; Wilson, 2011). The previous years provided a growing number of literature on the quality of interventions that besides the strong fundamental theories, are brief and low-cost and can be taught by teachers or researchers (Yeager & Walton, 2011b). Meanwhile, the substantial restriction of the interventions due to their lack of transferability in different contexts needs to be appraised. They are rarely tested in different academic and cultural context which would have the potential of application and implementation in order to broadly attain academic achievements. Therefore, brief focus on SPI in bibliometric summarize on the researches in different cultures and demographics contexts is interesting to be considered.

The history of the bibliometric term in 1969 was firstly defined as the application of mathematical and statistical methods to books and other media of communication. Through application of this method, a deeper understanding and classify of research publications happened with emphasis on the specific field, topics, countries of organization, citations, and keywords. To this end, Web of Science (WoS) database organization was distinguished as robust systematic front runner in the scientific references. This study aims to determine different publications type and examine different features of these publications on social-psychological intervention. To make contribution to the further study and analyzing WoS citation bibliometric analysis was conducted.

The Present Study

In this study, we report on the general characteristics of SPI that are included in the intervention. One of the most important and efficient databases of WoS is the Social Science Citation Index (SSCI). Here we utilized SSCI database to retrieve and analyze the publications on SPI in related disciplines aims to evaluate the publication trends from 1990 to 2018. A total number of 1517 relevant publications were extracted from WoS and analyzed by using the bibliometric method. Comprehensive analysis with brief overview on distribution of articles within the ranged time, scrutinizing document, and trend of publications, countries of contribution, top authors and organizations in different languages as well as citation and most frequent keywords were addressed. The bibliometric approach was employed in study incorporates descriptive as well as evaluative methods aims at indicating the characteristics and research trends of publications. Bibliometric analysis as a kind of quantitative method was also investigated for descriptive and evaluative methods to show the characteristics and applied research trend as suggested by previous reports (Karakus, 2018; McBurney & Novak, 2002). VOS viewer platform as bibliometric visualization technique was applied to present a specific and structural of the target field (Garfield, 2009; Karakus, 2018).

Background on Social Psychology Intervention

An organized summary of SPI classification has been previously provided in the work of Spitzer and Aronson. The study has been focused to identify the empowerment of authorized teachers and students through the development of interventions with the intention to tackle unequal opportunities rather than the structure or political change (Fergus, Noguera, & Martin, 2014; Spitzer & Aronson, 2015). The most prominent investigations are including Meditation interventions which can reduce the level of the student's anxiety that could help them to promote self-control, self-awareness, and enhanced working memory (Flook et al., 2010; Mrazek, Franklin, Phillips, Baird, & Schooler, 2013; Napoli, Krech, & Holley, 2005; Schonert-Reichl & Lawlor, 2010; Zylowska et al., 2008). Further role on model exposure for stereotype threat (Blanton, Crocker, & Miller, 2000; Hsin-Yi, 2015; McIntyre, Paulson, & Lord, 2003), reappraisals which significantly help the student social performance to regulate their negative emotions by applying techniques of writing about their fear and dissolve their cognitive possessions (Hembree, 1990; Jamieson et al., 2010; Mattarella-Micke, Mateo, Kozak, Foster, & Beilock, 2011; Ramirez & Beilock, 2011). Likewise, possible Selves interventions positively help students to think about their identities and being an ideal version of themselves which enables them to think positively about who they are and who to be in the future (King, 2001; Oyserman, Bybee, & Terry, 2006; Oyserman & Fryberg, 2006; Oyserman & Markus, 1990; Ruvolo & Markus, 1992). Other types of interventions are value affirmation interventions which help individuals to focus on the relevant topics concerning their lives and to blend out unrelated threats to strengthen their self-worth and integrity. The concept is based on the self-affirmation theory in which individuals strive for a self-conceptualization of moral integrity, for competence and for wellbeing adaptively adequate (Cohen & Sherman, 2014) (Cohen, Garcia, Apfel, & Master, 2006; Cohen et al., 2009; Martens, Johns, Greenberg, & Schimel, 2006; Miyake et al., 2010; Shapiro, Williams, & Hambarchyan, 2013; Steele, 1988). Social belonging interventions aim to change student's perception and interpretation of their negative experiences and misfortunes. It allows students to face challenges and to prevent them from withdrawal or disengagement especially in case of the transition to a new environment which naturally require high levels of adaptability and flexibility (Baumeister & Leary, 1995; Freeman, Anderman, & Jensen, 2007; Goodenow, 1993; Hurtado & Carter, 1997; Lavilles Jr & Robles, 2017; Patrick, Ryan, & Kaplan, 2007; Walton & Cohen,

2011). Cooperative learning interventions aim to involve the students working together and attain shared learning goals. It can facilitate the positive relations of students among each other to improve their performance and/or socio-emotional soft skills. They adopt a new understanding of group success as the achievement of each contributing individual (Aronson & Bridgeman, 1979; Johnson & Johnson, 1987; Sharan & Hertz-Lazarowitz, 1980; Slavin, 1980). Incremental mind-set interventions are able to influence anxiety and maladaptive behaviors as a response to failure by sending the key message that effort and struggle are inevitable, essential and valuable ingredients towards success. During the former interventions students are taught about brain plasticity which enables students to develop new abilities through effort and suitable learning strategies (Blackwell et al., 2007; Lin & Lin, 2016; Lin, Lin & Wu, 2016; Niatu & Puji, 2018; Spitzer & Aronson, 2015; Yeager & Walton, 2011a).

METHOD DESCRIPTION

Bibliometric research was carried out on evaluation of the research from 1991 to 2018. The bibliometric-based approach planned to analyze the scientific publications e.g. books and papers through statistical scope and mathematical methods (Kalantari et al., 2017; Repanovici, 2010). The bibliometric techniques have been firstly employed by the information scientists to study the growth and distribution of the reported scientific articles (Jamali, Md Zain, Samsudin, & Ale Ebrahim, 2015; Tsai, 2011). The databases collection was following the terms of psychology and SPI correlation. In this regard, WoS-generated data collection is chosen as dominant assessment tool for the majority of bibliometric scientists to acquire citation data (Bakri & Willett, 2011; Jamali et al., 2015). Application of WoS was successfully presented well-known citation database to provide bibliometric data for last several years (Aghaei Chadegani et al., 2013). We categorized the researches into the world trend of publications, ranking and collaborations, frequency of keywords, top authors and most-cited publication.

DATA EXTRACTION AND ANALYSIS

The derived bibliometric data of this research are updated with WoS and core collection databases comprising Science Citation Expanded (SCI-EXPANDED), Science Citation Index (SCI), and Arts & Humanities Citations Index (A&HCI) 1980-present, Conference Proceeding Citation Index-Science (CPCI-S), Conference Proceeding Citation Index Social Science and Humanities (CPCI-SSH) 2004-present and Emerging Sources Citation Index (ESCI) 2015-present. In terms of exclusively searching with the exclusive SPI title, data pattern to some extent limited with the selected category of psychology. Table 1 summarizes the main search criteria ascribed to the finite criteria within conducted research period.

Table 1: The Process of Data Collection

Search Terms	Result
WC=Psychology	1,317,740
TS=Social Psychology Intervention	2,726
#1 AND #2	1,517

The investigation was comprised in a spreadsheet with different categorizing documents of type, organization enhanced, source title, research areas, language, countries and year of publication. The research objectives mainly proposed to equip future studies with a direction of publication trends in SPI based approaches.

RESULT AND DISCUSSION

General Bibliometrics

The updated assessment presently has shown the amount of 1,317,740 papers extracted from WoS in psychology fields. From the above mentioned, 2726 of them were focused on SPI and the number of 1517 in combining with psychology which only 254 (16.15%) published under open access copyright. The statistical information from analysis confirmed total 1283 articles which categorized as 151 review article, 76 proceedings and 56 editorial material as well as 17 book chapter, 1 book review and 1 note report. It is remarkable that most of them (1385) has been published in English language and only 72, 25 and 23 numbers were in Spanish, French, and Portuguese. According to the data available in WoS extracted form 437 journals, could significantly mark the most influential journals as School Psychology (JSP) with 80 publications (5.27%), the American Journal of Community Psychology (AJCP, 63 publication ,4.15%), Counselling Psychology (36 paper, 2.37%), and Frontiers in Psychology with the (32 article, 2.11%). Reasonably, the prominent languages mostly used in these journals were English, Spanish, French and German by sequence (1385, 91.299%; 72, 4.746%; 25, 1.648% and 23, 1.516%).

Trends of Relevant Publications

The evaluation of the related publications from 1990 to 2018 demonstrates a total positive trend in the assessment. From the presented plot in Figure 1, there was moderate growth in number of articles within years of 1990 to 2010. The amount was then gradually raised up to 2012. Afterward, the graph has been continued with dramatic increment within range of 2012-2018 period.
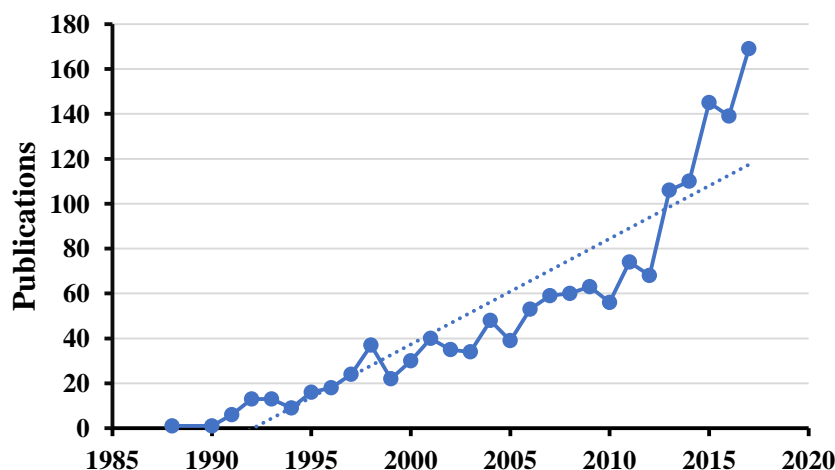
Figure 1: The up-to-date trend of the related publications. [Data extracted from www.vosviewer.com]

Ranking and Collaborations

Within a timeframe of passing around two decades up to 2018, over a thousand documents relevant for this study have been scrutinized. The topmost ten countries out of a total of sixty-three countries published total of 1489 documents (98.15%) with first place of United States ranking with 848 documents (55.9%). Along it, England scored the second place with total number of 173 publications (11.4%) followed by Australia, Canada, Spain, Germany, Netherlands, Italy and China together South Africa with 120 (7.91%), 85 (5.6%) 64 (4.22%), 63 (4.15%), 49 (3.23%), 31 (2.44%) 28 (1.85%) respectively. The distribution of scientific outputs (Figure 2) demonstrates the contribution of each country in the field. State Planet software was employed to generate the visualization of the particle distribution and creating the interactive world map among the countries (Kalantari et al., 2017).
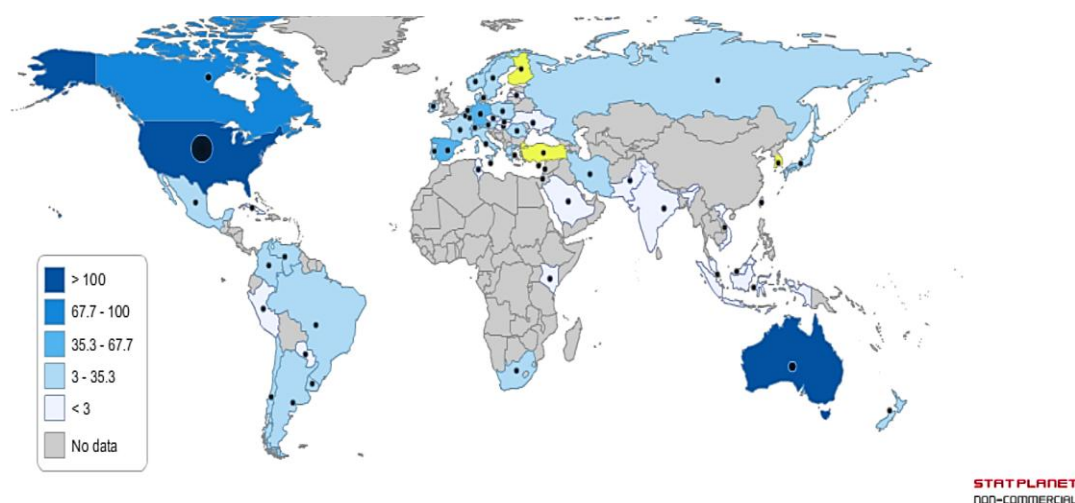

Figure 2: World distribution of the documents. [Data extracted from www.vosviewer.com]

The below trends of networks were extracted from VOSviewer. The graph pattern is an official freely available application for constructing bibliometric maps (http://www.vosviewer.com). It can be used for various approaches to examine full details to facilitate functions e.g. zooming, scrolling, and searching (Van Eck & Waltman, 2010). Figure 3 further displays the top-most frequent countries with their highest contribution to SPI and clearly reveals the highest-ranking belong to USA.

Keyword Plus

Equivalently effective as author keywords in the reference to bibliometric analysis KeyWords Plus also investigates the knowledge structure of scientific fields. Yet, it lacks the comprehension of author keywords in terms of an article's content (Zhang et al., 2016). The application VOS viewer displays a plot a relevance distance-based map along with keyword relevance clusters derived from the reference sections (Khalil & Crawford, 2015).
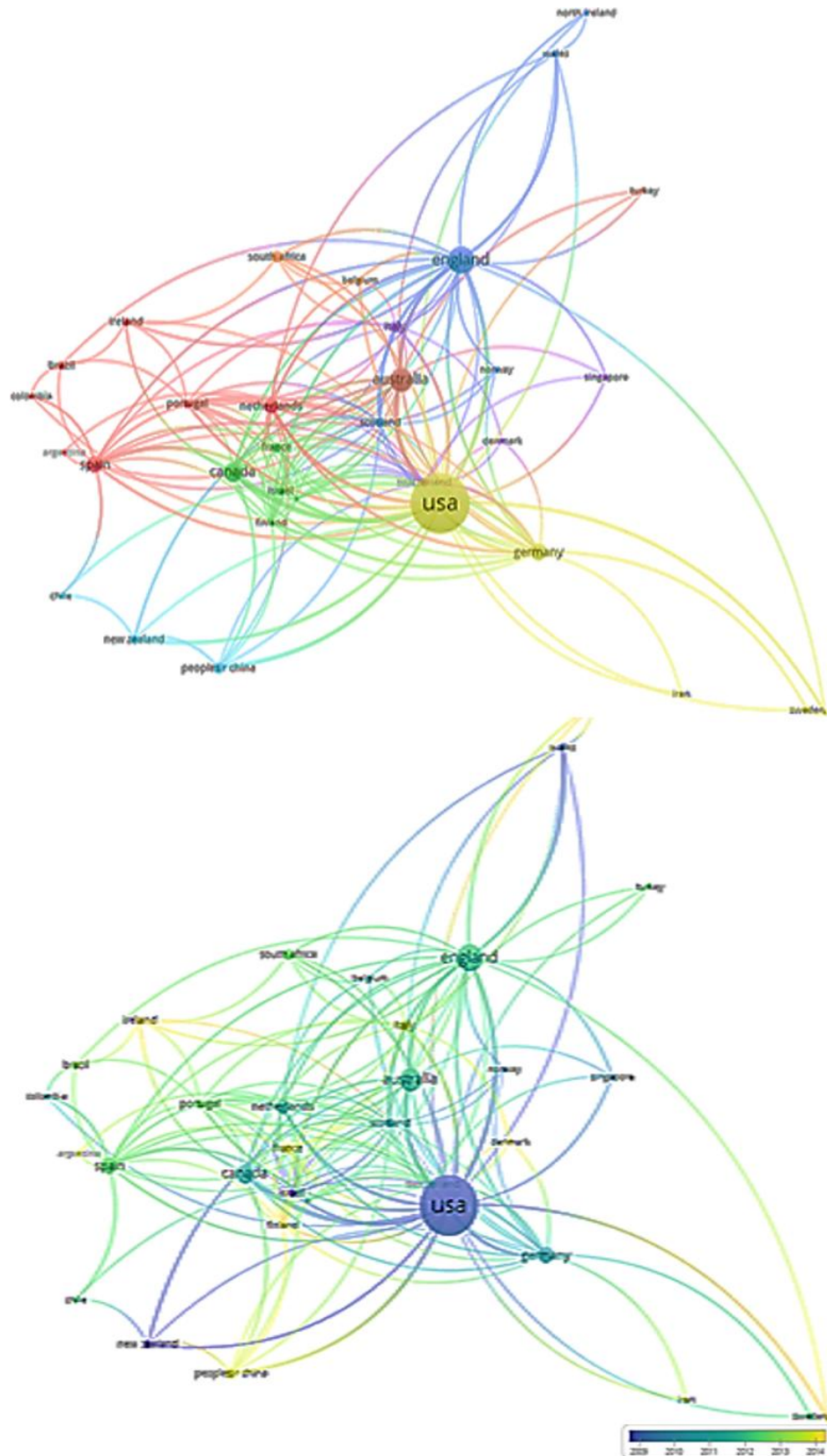
Figure 3: Countries networking on social psychology intervention. The most publications from 1999 to 2018 with USA, England, Australia, and Canada affiliations (upside graph), and 2009 to 2014 from the USA, England, Australia, Canada, and Germany (down part). [Data extracted from www.vosviewer.com].

From information from Figure 4, it can be observed that the topmost frequent data extracted from the total references conducted between the years of 1990 to 2018 by KeyWords plus illustration. This parameter was defined as a significant index for articles without author keywords or when they include the relevant terminology that might not able to be found in the title, abstract or keywords (Ale Ebrahim, 2016). The most frequent keywords related to SPI are summarized as

behavior, mental health, social support, students, attitude, performance, impact, choice, met-analysis, depression, positive psychology, children and stress.
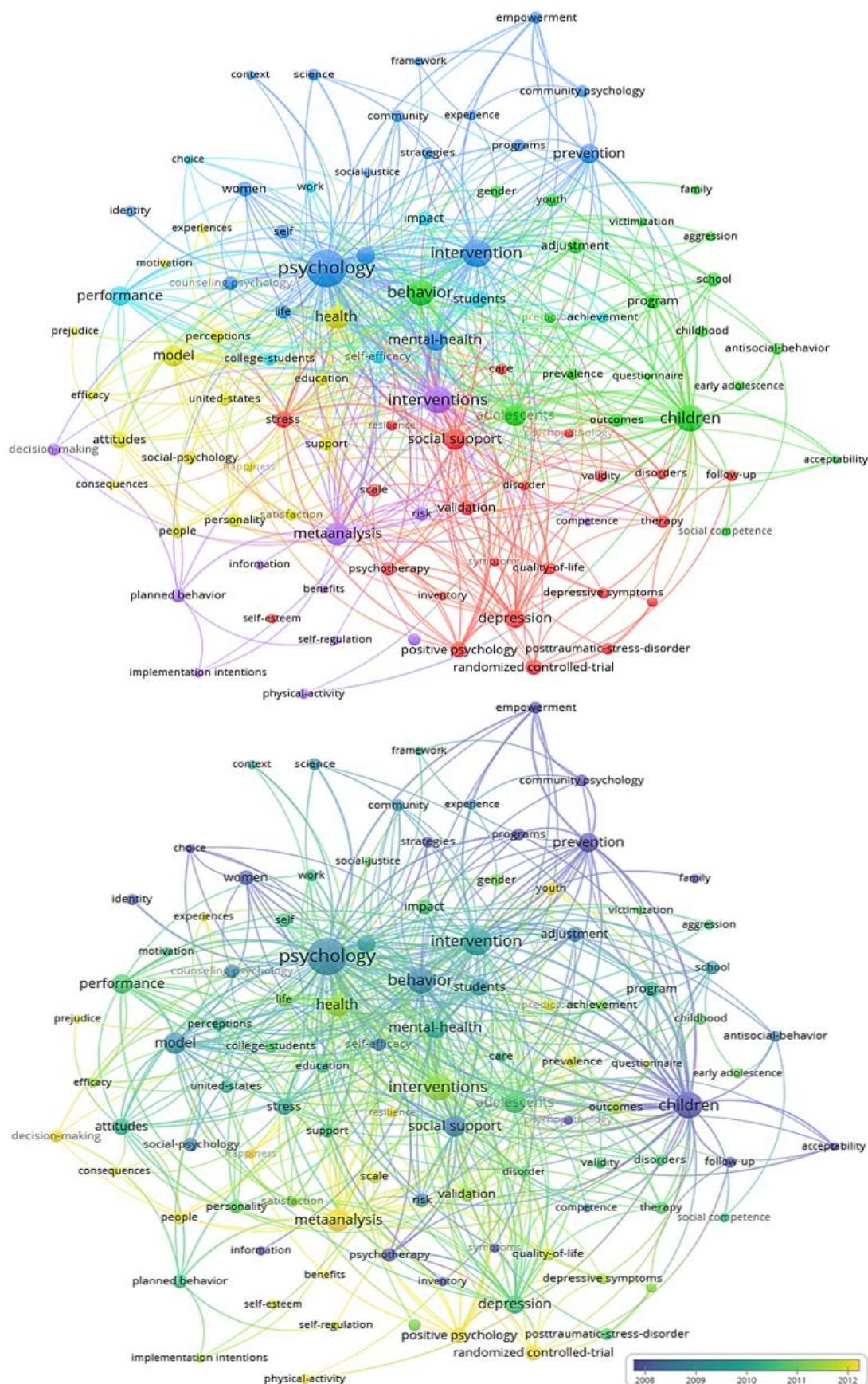

Figure 4: Keyword plus indicators visualization for social psychology intervention. All Keywords related to social psychology intervention (upside graph) and time-dependent SPI (down part). [Data extracted from www.vosviewer.com].

Figure 5: Keyword plus indicators visualization for the most dependent keywords. Time-dependent keywords related to student (upside graph) and intervention (down part). [Data extracted from www.vosviewer.com].
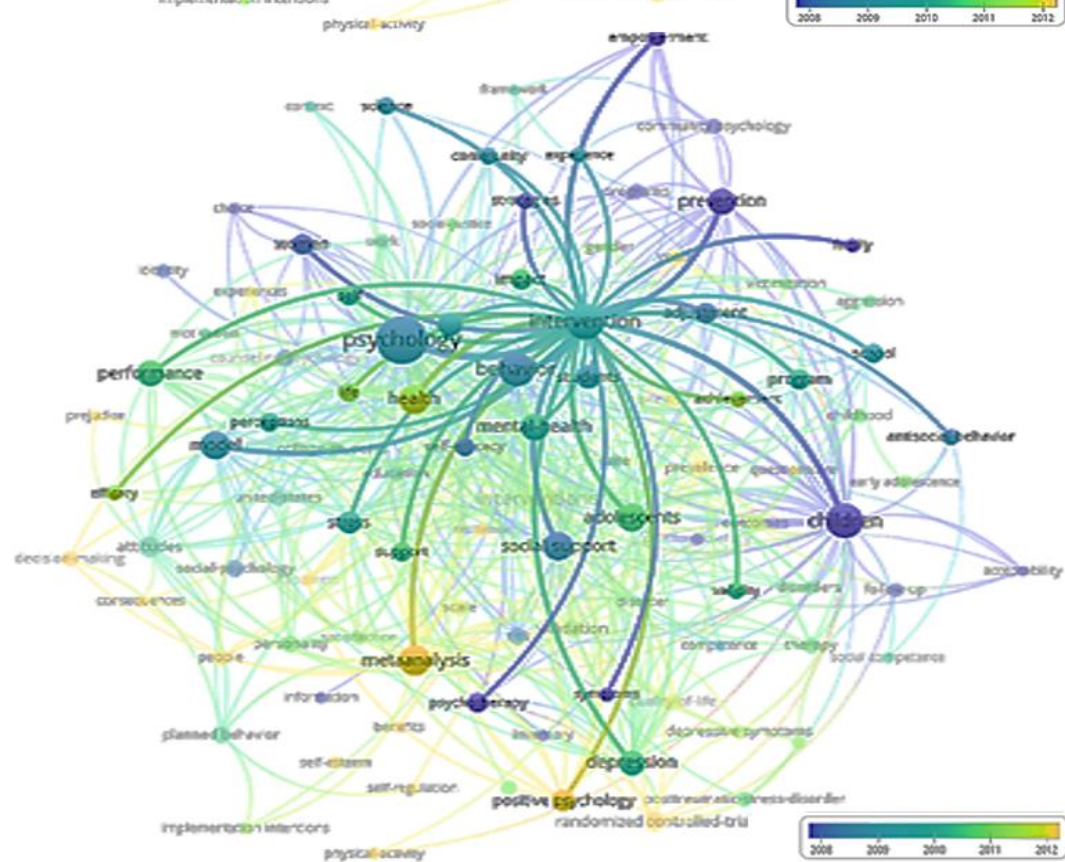
Top Authors and Most-cited Publications

Apparently, the most cited articles were selected consisting of documents. These papers were classified in the different categories of authorship, title, country of reputation, journal and applied methodology. The details of twenty number high-ranked WoS publications were selectively presented in Table 2:

Table 2: The Related Top Authorship and Most-cited Publications.

Author	Title	Country	Journal	Methodology
(Webb & Sheeran, 2006)	Does changing behavioral intentions engender bahaviour change? A meta-analysis of the experimental evidence	England	Psychological Bulletin	Meta-analysis
(Abrahamse, Steg, Vlek, & Rothengatter, 2005)	A review of intervention studies aimed at household energy conservation	Netherlands	Journal of Environmental Psychology	Review
(Fredrickson, Cohn, Coffey, Pek, & Finkel, 2008)	Open Hearts Build Lives: Positive Emotions, Induced Through Loving-Kindness Meditation, Build Consequential Personal Resources	USA	Journal of personality and social psychology	Experimental
(Bargh & Ferguson, 2000)	Beyond behaviorism: On the automaticity of higher mental processes	USA	Psychological Bulletin	Meta-analysis
(Scarr, 1992)	Developmental theories for the 1990s - development, and individual-differences	USA	Child Development	Meta-analysis
(Kashdan & Rottenberg, 2010)	Psychological flexibility as a fundamental aspect of health	USA	Clinical Psychology Review	Review
(Espelage & Swearer Napolitano, 2003)	Research on school bullying and victimization: What have we learned and where do we go from here?	USA	School Psychology Review	Review
(Walton & Cohen, 2007)	A question of belonging: Race, social fit, and achievement	Canada	Journal of personality and social psychology	Experimental
(Paris & Paris, 2001)	Classroom applications of research on self-regulated learning	USA	Educational Psychologist	Meta-analysis
(Glaser, 2000)	Child abuse and neglect and the brain - A review	USA	Journal of Child Psychology and Psychiatry and Allied Disciplines	Review
(Blanton & Jaccard, 2006)	Arbitrary metrics in psychology	USA	American Psychologist	Meta-analysis
(Leventhal, Leventhal, & Contrada, 1998)	Self-regulation, health, and behavior: A perceptual-cognitive approach	USA	Psychology & Health	Meta-analysis
(Russell, Kahn, Spoth, & Altmaier, 1998)	Analyzing data from experimental studies: A latent variable structural equation modeling approach	USA	Journal of Counseling Psychology	Experimental
(Granic, Lobel, & Engels, 2014)	The Benefits of Playing Video Games	Netherlands	American Psychologist	Meta-analysis
(Krantz & McCeney, 2002)	Effects of psychological and social factors on organic disease: A critical assessment of research on coronary heart disease	USA	Annual Review of Psychology	Meta-analysis
(Smith, Glazer, Ruiz, & Gallo, 2004)	Hostility, anger, aggressiveness, and coronary heart disease: An interpersonal perspective on personality, emotion, and health	USA	Journal of Personality	Review
(Gottman, 1998)	Psychology and the study of marital processes	USA	Annual Review of Psychology	Review
(Gerrard, Gibbons, Houlihan, Stock, & Pomery, 2008)	A dual-process approach to health risk decision making: The prototype willingness model	USA	Developmental Review	Review
(Hobfoll & Lilly, 1993)	Resource conservation as a strategy for community psychology	USA	Journal of Community Psychology	Meta-analysis
(Zeman, Cassano, Perry-Parrish, &	Emotion regulation in children and adolescents	USA	Journal of Developmental &	Review

Stegall, 2006)	Behavioral Pediatrics

Top Organizations in Research Publication

To further investigate the issue, current section illustrates the main varsities which have contributed the most publications in the field of SPI. The database selection of these universities was based on the threshold of at least twenty articles from 1990 to 2018. It is remarkable that University of California is the frontrunner organization with significant number of 55 publications (3.625 %) and followed by the University of London and the University of Illinois System with 38 and 35 publications respectively.

Table 3: The Most-cited Relevant University Publications

Search Terms	Result
University of California system	55
University of London	38
University of Illinois system	35
Pennsylvania commonwealth system of higher education Pcshe	31
State university system of Florida	28
University of Michigan	27
University of Michigan system	27
University System of Maryland	27
Oregon university system	26
Harvard university	25
University of North Carolina	25
Columbia university	24
New York university	23

CONCLUSION

The results clearly indicate that the United States of America dedicates itself with the highest level of attention in the area of social psychology intervention. Whereas, lower attention was focused on the research criteria in Asia continent, except China. Although the majority of the studies on SPI approach is from USA, but performed analysis highlight the vast research potential to validate without any specific considerations to certain region settings or cultures. Further research is required to identify different suitable types of interventions relevant to the array of contexts. It should be noted that the current study was included the most prominent WoS citations as a robust scientific database and limited with including other resources like Scopus.

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