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Teaching the Social Determinants of Health Through Medical Legal Partnerships: A Systematic Review

Benjamin Robinson
University of Virginia Health System
Kristian Welch (ktw2de@virginia.edu)
University of Virginia Health System
Michaela Martin
Legal Aid Justice Center
Amy Salerno
University of Virginia Health System
Drew Harris
University of Virginia Health System

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Abstract

Background: Medical education is increasingly focused on the social determinants of health (SDoH), but questions remain regarding how best to ensure that trainees become empowered to take action on the SDoH in their future practice. The authors conducted a systematic review to better define the impact that educational programs centered on medical legal partnerships (MLP) have on trainees' knowledge, attitudes and future practice.

Methods: The authors sourced data from PubMed, Web of Science, Index to Legal Periodicals, LegalTrac, Google Scholar, Academic Search Complete, Business Source Complete, SocINDEX, SSRN, and Proquest Social Sciences. Selected studies included those centered on Medical Legal Partnerships in graduate medical education and that measured outcomes of the participating trainees. Two abstractors independently extracted information about the study population, setting, design, intervention and outcomes. The literature search was conducted in 2019.

Results: Six out of 483 studies met the inclusion criteria. One study highlighted three different MLPs, thus eight total MLP programs were included. Trainees included residents from pediatrics, family medicine and internal medicine. Interventions ranged from didactic sessions, to advocacy projects, to hands-on community-based learning, to poverty simulation trainings. Benefits to trainees were wide in scope but all programs showed improvements in participants' understanding, comfort, confidence, and/or abilities in identifying and intervening on SDoH in their patients.

Conclusion: As undergraduate and graduate medical education is increasingly considering how to effectively teach trainees to understand and address SDoH, the findings in this systemic review suggest that inclusion of Medical-Legal Partnerships into training programs is an effective approach.

Introduction

The social determinants of health (SDoH), such as substandard housing, psychosocial stress, and access & affordability of healthcare, are established risk factors that lead to worse health outcomes in disadvantaged populations[1]. An emphasis on addressing social determinants to improve the health of vulnerable populations is integral to many health initiatives around the world[2, 3]. Although healthcare providers also are increasingly recognizing that social determinants are important drivers of health in their patients and in their communities, the vast majority of providers do not routinely identify or address their patients' social needs in clinical practice.[4] There are many barriers that explain this disconnect between best practice and reality, including providers' lack of understanding of the importance of social issues, discomfort discussing these issues, constrained time and lack of education/knowledge of community resources available to help[5, 6]. To teach the SDoH effectively such that future doctors are empowered to take action on the SDoH in their future practice, educators will need to consider these barriers in their approach to SDoH training.

Fortunately, medical schools and residency programs are increasingly broadening the scope of SDoH educational approaches. Curricular interventions have included didactic sessions, service-learning, advocacy projects, experiential learning, and community partnered initiatives that collaboratively work to identify community needs and intervene through service or research.[7, 8] As connecting patients to community resources and non-physician experts on SDoH is an integral component of SDoH interventions[9], effective SDoH training programs need to engage in a team-based approach to train physicians to make an impact on health disparities.

A Medical Legal Partnership (MLP) is a team-based multidisciplinary intervention that incorporates co-located layers with SDoH expertise into a healthcare team.[10] Healthcare teams with MLP's can leverage legal advocacy to address challenging unmet social needs. As an example, an asthma patient who lives in a rented apartment with leaks, mold and an unresponsive landlord is unlikely to resolve their environmental triggers without legal advocacy.

Over two decades ago, the first MLP was formed by doctors at Boston Medical Center.[11] Since that time, the MLP model has been rapidly expanding, with hundreds of leading health organizations housing MLP's in diverse settings throughout the US[12], Canada and Australia[6]. Despite the enthusiasm and growth of MLP's, how to best incorporate MLP into curriculum designed to empower future providers to target SDoH is understudied. We conducted a systematic review to better define the value of MLPs multidisciplinary approach within medical educational curricula. In doing so, we also highlight innovative educational approaches taken by established MLP's.

Methods

We conducted a systematic review to better define the impact of curricular interventions within MLPs targeting the knowledge, attitudes and practice of MLP-engaged trainees with regard to the social determinants of health and health disparities.

Literature search strategy

We designed our search strategy to be as inclusive as possible of published investigations of MLP's in the medical or legal literature. The following publically available electronic databases were used in the search: PubMed, Web of Science, Index to Legal Periodicals, LegalTrac, Google Scholar, Academic Search Complete, Business Source Complete, SocINDEX, SSRN, and Proquest Social Sciences. Our search for articles was limited to those published in English. Given that MLP's are relatively new phenomena, we did not limit our search to a specific time period of publication. The search terms used were "medical legal partnership" or "medical legal partnerships." In order to ensure we didn't overlook any relevant studies, we also reviewed the references of all studies from our initial search and included any study not captured elsewhere. We did not include abstracts, unpublished data, or narrative accounts. Once we completed our initial search, we eliminated duplicate citations and imported the list of citations (211 unique references) into an EndNote X7 electronic database.

Inclusion and Exclusion Criteria

We established a priori study eligibility criteria (Table 1). We sought to include studies that centered on Medical Legal Partnerships in graduate medical education but also included one study in undergraduate medical education. We included curricular interventions that measured outcomes of the participants engaged in the program. Measured outcomes centered on changes in knowledge, attitudes or practice by MLP-engaged medical students or medical residents.

Study Selection

Two members of the team independently reviewed each title and abstract for eligibility (BR and KW). Reviewers resolved conflicts by discussion and a third reviewer (DH) adjudicated disagreements if needed. Three team members (DH, BR and KW) independently reviewed the full text of relevant articles and recorded the primary reason for article exclusion during the review process.

Data Extraction

Reviewers extracted data from each study meeting the inclusion criteria in a standardized process. Reviewers extracted data regarding the population and setting studied, the specifics of the intervention, the study design and study outcomes.

Results

We identified 483 studies in our initial search and assessed 213 full-text articles for eligibility (Fig. 1). Using our inclusion and exclusion criteria, we excluded 207 articles. The vast majority of excluded studies (N = 155) were excluded due to not meeting the intervention criteria; in these studies, no specific intervention was analyzed. Twenty-nine articles did not meet the population criteria as they were not focused on medical education outcomes. Twenty three studies did not meet the study design criteria, as these studies were largely case reports/studies or reviews of related topics. Six studies were included in this systematic review. One of the included studies[13] highlighted three separate MLP programs that each met our inclusion criteria, thus we describe a total of eight MLP interventions.

Characteristics Of Included Studies

Population and Settings

Sample sizes of interventions ranged from 19–147 (Table 2). Participants included medical students[16], internal medicine interns[13], and residents[13], family medicine interns[17], combined medicine-pediatrics residents[15], as well as pediatric interns[12, 13] and residents[14, 15]. Medical Legal Partnerships in all but one of the studies included a legal aid organization partnering with an academic medical center; In the MLP program that did not have a partnering legal aid organization, lawyers were

integrated into the healthcare organization directly[17]. One MLP program also included a law school partnership [16].

Interventions

Each MLP program in this analysis had multifaceted and multidisciplinary curricular interventions centered on the social determinants of health and health disparities. Interventions were varied and ranged from didactic trainings to one-on-one educational sessions in the context of patient care, to longitudinal experiences. Some interventions were university/medical center-based entirely, while others included community based activities such as a poverty simulation and tours of community-based organizations that address social needs such as food banks or homeless shelters.[13]

Study Designs

Two studies were non—randomized controlled studies that compared residents who received a MLP intervention to residents who did not receive the MLP intervention (e.g. control group)[12, 14]. Three studies were pre/post intervention measuring the impact of the intervention on the same group of residents over time[13, 16, 17]. One study was a cross sectional study that compared residents at different clinical sites with varying levels of social work and legal aid support, ranging from having a co-located MLP with multiple social workers and lawyers on site, to a clinical site without co-located MLP services (but remote access)[15]. Two programs described the results of surveys completed by residents who were evaluating their experience within a MLP curricular intervention[13].

The evaluations for each MLP study in this analysis utilized surveys to assess residents' and students' knowledge, attitudes and practice of identifying and intervening on social determinants of health. One study incorporated direct observations of residents' patient care interactions to gauge the effectiveness of the skills learned in MLP didactic sessions.[17]

Outcomes

Each study used different measures of determining the effectiveness of their interventions. However, each study demonstrated improvements in some aspects of knowledge, attitudes or practice regarding participants' understanding, comfort, confidence and abilities in identifying and intervening on the social determinants of heath in their patients. As an example, in one study, after the MLP curricular intervention, residents were more likely to improve their knowledge surrounding public benefits, housing and education; were more comfortable discussing issues surrounding poverty with their patients; were more likely to ask patients about social determinants such as safe housing and food insecurity; were more likely to share relevant information about community resources with their patients; and were more likely to document in the medical record issues related to public benefits, housing and food insecurity[12]. In another study, residents who completed an MLP curricular intervention were more likely to believe it is the responsibility of the physician to help patients find free legal services when needed; have increased knowledge surrounding how to assist patients seeking public benefits; were more likely to assist patients with obtaining public benefits and obtaining safe housing; and were more likely to refer patients to legal

aid when needed[13]. Qualitative evaluations revealed that participants in MLP curricular evaluations often felt more empowered to advocate for the social and legal needs of their patients after program participation[13]. In the MLP program that targeted intern performance in discussing advanced care planning with their patients, the intervention was successful in improving ACGME rated levels of competence in these discussions.[17]

Discussion

To our knowledge this is the first systematic review of medical education curricular interventions that center on Medical Legal Partnerships targeting social determinants of health. In this review of eight MLP programs, all interventions were effective at improving participants' knowledge, attitudes and/or practice regarding issues related to the SDoH and health disparities. These improvements were wide in scope and included benefits in participants' understanding, comfort, confidence, and abilities in identifying and intervening on the social determinants of heath in their patients. Participants from multiple disciplines including family medicine, pediatrics and internal medicine residencies, as well as undergraduate medical students each demonstrated benefit from the MLP-centered interventions. Students and residents engaged with MLPs through varied activities built into an SDoH curriculum including didactics, advocacy training, and interactive programs such as a poverty simulation. Multiple MLP programs highlighted in this review brought learners out of the ivory towers of academia and into the community to learn about, and collaborate with, community based resources. In doing so, MLP's help bring learners closer to the context where risks emerge, and foster collaboration with key change agents[18].

Even with a targeted curriculum, effective training on SDoH that impacts health disparities is no easy task; this study highlights the important role that MLPs may provide in addressing this difficult topic in medical education. As teaching the SDoH to impact health disparities is relatively new in medical education, there is a limited evidence base to guide and assess effective curricular development. Thus, it is important to consider teaching the SDoH through MLP in the context of known effective medical education approaches that target other health topics with the goals of better health outcomes.

First, understanding causal pathways is critical for learners to comprehend, retain, apply and advance most topics in medicine[19]. Causal pathways in the SDoH and health disparities are no exception. An understanding of the systems, laws and policies that are in part responsible for ongoing disparities in environmental, behavioral or medical determinants is important to integrate into medical education curriculums. As highlighted in each of the studies within this review, lawyers focused on caring for vulnerable populations through legal advocacy are well-equipped to provide this education within the context of a MLP.[12, 14, 16, 17, 20, 21]

Second, to impact health disparities through education, it is critical to teach students actionable and practical skills to help address SDoH[7]. In traditional medical education, learners gain these skills by practicing medicine in closely supervised environments alongside of supervisory clinicians (e.g. clinical rotations in medical school or residency training). Similarly, MLP's provide a unique opportunity for which

learners can foster advocacy skills by working alongside a lawyer with experience and expertise in advocacy. In many of the above-described MLP programs, learners work one-on-one with lawyers, and gain confidence in ameliorating unmet social needs in their patients through real patient encounters.

Third, simulation training is a widely established tool in medical education that can help learners experience a virtual reality through which they gain situational awareness, enhance communication skills and learn through a cycle of feedback and debriefing[22]. Simulation trainings, such as the poverty simulator which was incorporated in the Boston Medical Center MLP program described in this review[13], can be an effective experiential learning tool within SDoH training[23]. For learners who might not have previously experienced poverty, a simulator, which includes an interactive immersion experience, can sensitize participants to the ways in which their patients are constrained and shaped by economic and political forces[24]. An improved understanding of these structural challenges is an important aspect of training physicians to become advocates for the needs of their most vulnerable patients.[24, 25]

As educators consider how they will incorporate SDoH into their curriculums, the opportunity to partner with MLP's is timely as MLP's are increasingly becoming an important component of multidisciplinary clinical care teams around the country. Over 400 health care organizations have developed MLPs in 48 states in the US and most have formed in the past decade[26]. Many MLPs, including all of the presented programs in this review, operate in partnership or within an academic medical center which facilitates the engagement of medical trainees into multidisciplinary programs.

This systematic review has several limitations. First, we included all MLP studies that focused on medical education outcomes. These studies are heterogeneous in their intervention, design and evaluation. This heterogeneity limited our capacity to conduct a quantitative meta-analysis. Second, while we employed a comprehensive search strategy with the help of an experienced medical librarian, it is possible that we did not capture all relevant articles. Third, there were no studies that compared the MLP intervention directly with other forms of social determinants of health training. However, the qualitative study results presented above highlight the importance of the multi-disciplinary perspective in SDoH curricula: Having a legal expert on the team positively impacted measured outcomes including participants' perceived ability make a difference as a physician. Lastly, most MLP's around the country have been formed in the last decade and research into the impact of MLP on patient care outcomes is nascent. Several of the included studies analyzed the impact on student or resident behavior, such as demonstrating improvement in documentation surrounding SDoH in the electronic record[12] or increased likelihood of referrals to community organizations including legal aid[13]. However, more rigorous, quantitative analysis exploring the impact of MLP educational programs on participants' future practice is warranted. Studying the impact of MLP programs on patient outcomes outside of a medical educational program was beyond the scope of this review.

Conclusion

As medical schools and residency programs are increasingly considering how to include educational programs targeting the social determinants, the findings in this systemic review suggest that Medical-Legal Partnership centered interventions should be considered in both educational curricula. As medical legal partnerships continue to grow in size, scope and location around the country, the opportunity to engage MLP's into medical educational curriculum will expand. More studies evaluating the impact of these educational programs centered on MLP are needed, including studies that document changes in student and resident practice.

Declarations

Ethics approval and consent to participate: Not applicable (systematic review, no patients recruited, no IRB/ethics approval needed)

Consent for publication: all authors agree to publication. Patient consent not applicable (systematic review)

Availability of data and materials: The authors sourced data from PubMed, Web of Science, Index to Legal Periodicals, LegalTrac, Google Scholar, Academic Search Complete, Business Source Complete, SocINDEX, SSRN, and Proquest Social Sciences.

Competing interests: None

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Authors' contributions: BR and KW did the primary literature search and created the tables used in the manuscript and wrote the initial draft of the manuscript. DH, MLM and AS contributed to the final version of the manuscript, provided critical feedback and helped shape the research, analysis and manuscript. DH supervised the project.

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Authors' information (optional):

- **Robinson and K. Welch** are medical students at the University of Virginia, Charlottesville VA
- **L. Martin** is an Attorney at the Legal Aid Justice Center in Charlottesville VA. She is also the co-director of the "Common Cause" Medical Legal Partnership between the Legal Aid Justice Center and the UVA Health System.
- **Salerno** is an Assistant Professor, Department of Medicine, University of Virginia, Charlottesville VA.
- **Harris** is an Assistant Professor, Department of Medicine, Division of Pulmonary & Critical Care, University of Virginia, Charlottesville VA. He is also the Assistant Program Director of the UVA Internal

Medicine Residency Program and co-director of the “Common Cause” Medical Legal Partnership between the Legal Aid Justice Center and the UVA Health System.

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Tables

Table 1
Inclusion and Exclusion Criteria

PICOTTSS CRITERIA	Inclusion	Exclusion
P: Population:	Trainees in medical education, any discipline	
I: Intervention:	Medical Legal Partnerships programs integrated into educational curriculum in any capacity	
C: Comparator:	Any	
O: Outcomes:	**Knowledge or Attitudes** surrounding the importance of social determinants of health in patients / communities, as well the importance of legal aid / lawyers as team members on healthcare team **Practice** (including documentation) regarding any change in identifying or addressing unmet social needs in clinic patients	
T: Time over which to review literature:	Any	
T: Time allotted for outcomes to appear:	Any	
S: Study Designs Allowed:	Trials Cohort Studies Pre/Post single group	Case report or case series Systematic review Conference abstracts Review articles
S: Setting Allowed:	Any (E.g. hospital, clinic, community, hospice, VA, behavioral health)	
Publication Language	English	Any other

Table 2
Characteristics of Medical Legal Partnership programs

Study	Population & Setting	Intervention	Study Design	Outcomes
Klein, 2014[14]	Pediatric residents (N = 47) Co-located MLP within a hospital based pediatric primary care center in Cincinnati Children's Hospital partnered with the Legal Aid Society of Greater Cincinnati.	Delivery of a social determinants of health video curriculum by a multidisciplinary team (medical and legal experts). The curriculum featured clinical vignettes to highlight the importance of screening interventions targeting social determinants of health.	Non-randomized, controlled study Compared residents who received the video intervention to residents who did not (control) Surveys of patients and parents pre/post 6 month intervention Outcomes assessed: 1) Confidence in screening and intervening on behalf of SDH 2) Rates of referrals to MLP 3) Rates of referral for infant formula distribution for those who were food insecure	24 residents received the intervention, 23 residents received a standard curriculum (control) The intervention group was 1) More confident screening for housing, benefits and educational issues 2) More likely to screen for domestic violence and depression 3) Refer patients for formula distribution when food insecurity was found.
Klein, 2011[12]	Pediatric interns (N = 38) Co-located MLP within a hospital based pediatric primary care center in Cincinnati Children's Hospital partnered with the Legal Aid Society of Greater Cincinnati.	Delivery of a mandatory 2 week intern advocacy curriculum that incorporated a focus on the social determinants of health including shadowing social workers, guided tours of community organizations such as food banks and lectures taught by multidisciplinary experts (medical and legal) including topics such as the rationale behind MLPs, as well as technical and legal aspects of public	Non-randomized, mixed methods study Compared interns who received the curricular intervention to the prior year interns who did not (control); Also assessed for pre/post change in the intervention group	20 interns received the intervention, 18 interns received a standard curriculum (control). For both the pre/post comparison within the intervention group AND the intervention compared to control group,

Study	Population & Setting	Intervention	Study Design	Outcomes
		benefits, housing and education.	Outcomes assessed: 1) Knowledge surrounding benefits, housing and education 2) Attitude/Comfort assessing patients social needs 3) Documentation of social determinants in the EHR 4) Practice: referral rate to the MLP program	the intervention group: 1) More knowledgeable about benefits, housing and education 2) More comfortable discussing poverty issues; more likely to share information about relevant community resources; More likely to ask patients about social determinants including safe/stable housing and food insecurity The intervention group when compared to the control group was: 3) More likely to document issues related to benefits, housing and food insecurity 4) Had a trend toward increased referral rate to the onsite MLP (4% versus 2.9%, P = 0.13)

Study	Population & Setting	Intervention	Study Design	Outcomes
O'Toole, 2012[15]	Pediatric and combined internal medicine/pediatrics residents (N = 40) Continuity clinics at 3 different sites that had varying levels of social service and legal supports within Cincinnati Children's Hospital Center – ranging from a clinic with an onsite MLP with 2 lawyers, a paralegal as well as 3 full time social workers, to a clinic with no legal support and limited access to a social worker	None	Cross-sectional comparative survey of resident's confidence and practice patterns identifying and addressing SDH Comparison between residents who had their continuity at different clinical sites stratified by the level of legal and social work support. Studied outcomes in residents at different clinical sites included differences in knowledge, attitudes and practice related to social determinants of health in their primary care practice.	When compared to residents who had their continuity clinic in a setting without co-located MLP, residents with access to co-located MLP: 1) Had increased confidence in their knowledge of benefits and food insecurity 2) Were more likely to ask patients about their housing, WIC (women infant and children program), public benefits and food insecurity 3) Spent a greater amount of time discussing social history with their patients

Study	Population & Setting	Intervention	Study Design	Outcomes
Pettignano, 2017[16]	3rd year medical students (N = 100) MLP with Children's Healthcare of Atlanta, Morehouse School of Medicine, the Atlanta Legal Aid Society and the Georgia State University College of Law	Delivery of a curriculum designed to educate students about MLP's and the ways in which they could collaborate with other professionals to address social determinants of health in their patients / clients	Pre/Post intervention study analyzing impact of 3 different cohorts of medical students over 3 years. Survey regarding the perceived benefits of an MLP and the importance of inter-professional practice as well as assesses subjects confidence regarding their ability to identify and address social determinants of health in their patients	After the intervention, students were more likely to: 1) Appreciate that social determinants such as access to public benefits, can impact the health of low-income patients 2) Screen patients for socioeconomic and legal issues related to income, education, family law, health insurance, public benefits, and supplemental security income / disability. 3) Refer patients to a legal resource when facing a patient with socioeconomic or environmental issues that may affect health
Cohen et al, 2010[13]	Medical residents (N = 143) at three clinics participated in this study. LegalHealth, a division of New York Legal Assistance has weekly co-located MLP clinics at 16	Didactic sessions through grand rounds presentations such as "Bring advocacy to patients," and one to one teaching sessions on topics such as income supports Multiple components including a poverty	Pre/Post intervention surveys surrounding knowledge, attitudes and practice in MLP Evaluations limited to surveys after the	After completing the interventions, residents were: 1) More likely to believe it is the responsibility of the physician to

Study	Population & Setting	Intervention	Study Design	Outcomes
	different hospitals and clinics. Interns (N = 76) in the primary care internal medicine program participated in this study. MLP Boston has co-located clinics at Boston Medical Center and six community health centers. Pediatric interns (N = 19) participated in this study. Peninsula Family Advocacy Program is a collaboration between Lucile Packard Children's Hospital at Stanford, Ravenswood Family Health Center in East Palo Alto, San Mateo Medical Center and the Legal Aid Society of San Mateo County.	simulation session, and physician advocacy training which includes touring community resources and didactic sessions relevant to social determinants of health as well as clinical exposures with vulnerable populations Multiple components including an interdisciplinary course "medical-legal issues in children's health," and separate didactic sessions on topics such as "Immigrants and the health care system" and "your patient and the workplace," as well as one on one sessions for a range of topics including legal status (e.g. immigration) and personal stability (e.g. advanced directives, guardianship)	interventions and informal qualitative feedback Evaluations limited to surveys after the interventions and informal qualitative feedback	help patients find free legal services when needed 2) Have increased knowledge regarding how to assist patients seeking public benefits 3) More likely to refer patients to legal services 4) More likely to assist patients with obtaining government benefits and obtaining safe housing After completing these programs: 1) 97% of participants reported they could screen for two unmet social needs 2) 74% strongly agreed and 21% somewhat agreed that they better understood poverty and the majority felt that "the experience has helped me better understand how poverty can affect health"

Study	Population & Setting	Intervention	Study Design	Outcomes
				Qualitative feedback included “I feel more encouraged in my ability as an MD to make changes” Interns attitudes towards legal screening for needs improved, as few providers reported concerns about making patients “nervous” with legal questions Qualitative feedback included “this course does a whole lot to empower students to effective action and advocacy” and “ seeing how lawyers prioritize components of a patient case differently than physicians gave me a new perspective on how I might approach a patient.”

Study	Population & Setting	Intervention	Study Design	Outcomes
Pettit, 2019[17]	Family medicine interns (N = 39) Tucson Family Advocacy Program MLP within the University of Arizona Department of Family and Community Medicine	A multidisciplinary (MLP director and medical director of primary care clinic) led advance care planning training program which included didactics and direct observations of residents conducting advance care planning discussions	Pre/Post intervention surveys related to residents comfort performing advanced care planning discussions MLP director ratings of residents during direct observations of residents conducting advanced care planning (scored according to ACGME milestone ratings during shadowed patient encounters).	Interns' advanced care planning discussions with patients improved after receiving the intervention – During the first year of the program, residents were almost all rated as ACGME level 1 "beginner" or 2 "novice" and by the 3rd observed session, residents were all rated at least a ACGME level 3 "developing" which is the expected level for a 2nd or 3rd year resident. Residents also reported increased comfort leading advanced care planning discussions.

Figures

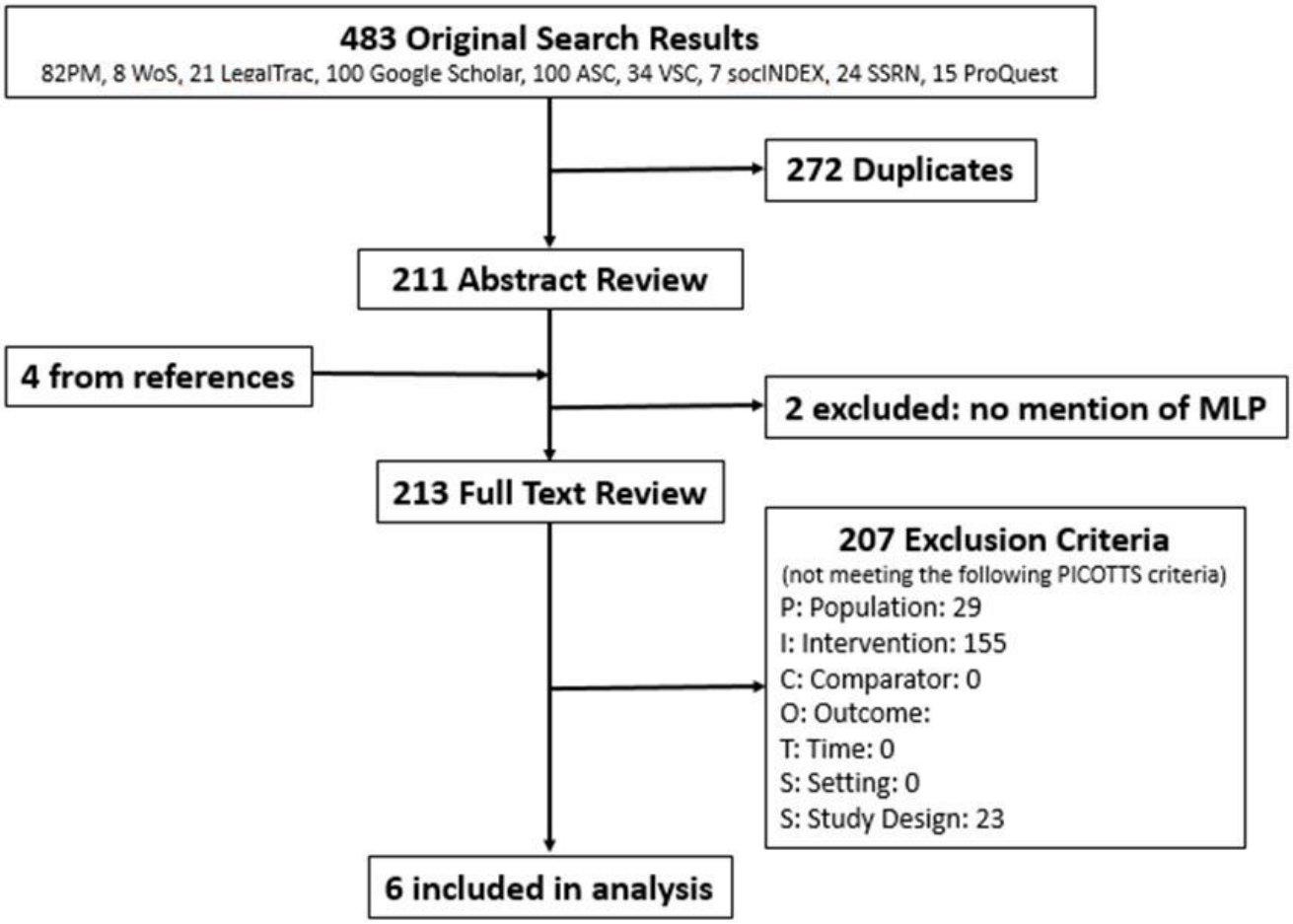

Figure 1

Article review flow diagram. Abbreviations: PM: PubMed, WoS: Web of Science, ILP: Index to Legal Periodicals, ASC: Academic Search Complete, BSC: Business Source Complete, SocINDEX, SSRN: Social Science Research Netwrk, and Proquest: Proquest Social Science