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A historical and critical analysis of park prescriptions

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ABSTRACT

Park Prescription (PP) is a grassroots movement encouraging physicians to “prescribe” parks to patients, promoting healthy parks and people. However, little is known specifically about PP’s ability to increase participant health outcomes. While some enthusiastically see PPs as a form of delivering a medical treatment, others question the lack of evidence to support writing a nonmedical prescription. A critical analysis of the PP movement’s history and related research is needed to not only drive its research agenda but also to assist in its desire to see parks and natural areas as an accepted and holistic part of the health care system. The authors believe an interdisciplinary discussion focusing on PP history, its collaborations, and setting a unified research agenda is necessary to moving forward the idea of PPs for parks and natural settings.

KEYWORDS

Park prescription; health & wellness; recreation & health

Park Prescription (PP) encourages physicians and other health care providers (HCPs) to “prescribe” parks to patients, promoting these spaces as a place to get and stay healthy. From a park and recreation perspective, PPs offer another way to get the message out to both the public and HCPs about the health benefits of parks. However, these programs are not without challenges, including making collaborations between stakeholders (e.g., HCPs, public health, exercise professionals, recreation professionals, and community members), determining shared terminology and outcomes, sustaining funding, and providing evidence that PPs are a form of medical treatment and should be a part of the overall health care system.

How practitioners from unrelated medical fields understand the definition of “prescription” is at the heart of the program’s success. A prescription is “an instruction written by a medical practitioner that authorizes a patient to be issued with a medicine or treatment” as well as “a recommendation that is authoritatively put forward” (Prescription, 2018). Inherent in these definitions is an authoritative and knowledgeable figure providing guidance. As such, HCPs may view prescriptions as something to be given based on medical evidence. This can be contrary to a recreation and parks program that aims for HCPs to prescribe parks to create awareness of health benefits of public parks and spending time in nature. Thus, evaluating the health outcomes of PPs beyond anecdotal evidence becomes critical to promoting such programs to HCPs.

PPs are defined as “a focus on programs or interventions that ... Include a health or social service provider, who encourages their patients/clients to spend time in nature

and with the goal of improving their health and well-being” (About Park Prescriptions, n.d.). Programs across the United States have a variety of approaches. Some focus on HCPs prescribing public parks, trails, state parks, or equipment to patients. Other PPs have HCPs refer the patient to park and recreation agencies (Portland Rx Play Medical Admin Material, n.d.). These programs have met with some success but still lack formalized assessment that provides adequate evidence necessary for some HCP involvement.

Despite these challenges, the excitement these programs have generated has continued interest and development of PPs across the country. Whether PPs are currently viewed as having little medical evidence or an accepted medical treatment to get people healthy is dependent on continued research and discussion. However, the PP movement, until recently, lacked coherence and a unified discussion. We believe an interdisciplinary discussion focusing on the PP movement’s history, related research, critical analysis, and recommendations for the future is necessary.

Historical perspective of Park Prescription movement

To understand current PP and its grassroots movement, a historical approach is needed. This movement, while typically centered on similar titles and intentions, has had differing approaches dependent on the organizer’s professional paradigm (e.g., recreation, HCPs, public health, or exercise), the community needs, and funding. A historical perspective provides insights into the iterations of programs and partnerships and demonstrates the different approaches from the disciplines and professions involved.

The notion of providing nonmedical prescriptions has historical, global, and interdisciplinary contexts. While a seemingly recent phenomenon, nonmedical prescriptions occurred in ancient times. In fact, Susruta from India, Galen from Rome, and Hippocrates from Greece were the first recorded physicians to prescribe exercise for disease management (Tipton, 2014). As societies became more industrialized in the 19th century, Victorian philanthropists along with some medical professionals saw urban parks and public baths/swimming pools (Wiltse, 2007) as a “way of preventing the spread of infectious disease from poor” (Carpenter, 2013, p. 122). As the parks and recreation (P&R) field began to thrive in the 20th century, the medical profession’s view of parks’ connection to public health diminished (Bashir, 2016). However, the contemporary idea of nonmedical prescriptions that support patient health started in 1964 with prescriptions for food. Dr. Jack Geiger began prescribing food to children of impoverished families in the Mississippi Delta (Geiger, 2005). Reach Out and Read (ROR), created by pediatricians and early childhood educators in 1989, is an example of prescribing a nontraditional treatment (About ROR, n.d.). This program prescribes books and reading aloud to children to help with early brain development. The success of the ROR program resulted in influencing parents to read to their children (Mendelsohn et al., 2001) and improving preschool language development (Sharif, Reiber, & Ozuah, 2002).

Globally, social prescriptions involving physical activity (PA) were developed as a solution to the increasing obesity epidemic with London’s Tower Hamlets and the U.S. Health Leads programs in the 1990s (Carpenter, 2013). A “social prescription” is

defined as “a way of linking patients in primary care with sources of support within the community” (Bickerdike, Booth, Wilson, Farley, & Wright, 2017, p.1). Social prescriptions encompass activities such as the arts, recreation, parks, education, and environmental activities (Morton, Ferguson, & Baty, 2015). In 1998, New Zealand (NZ) Ministry of Health developed the Green Prescription program focusing on getting patients physically active in nature (Who’s Involved, n.d.). Around the same time, the United States developed its own form of social prescribing with parks to increase PA. One of its first PPs to surface was in 1999 and was called Prescription Trails (Centers for Disease Control and Prevention, n.d.). This PP is the beginning of the revival in the belief that parks contribute to the health of their community.

Initial funding and support for the grassroots development of PP came from collaborations between different sectors and professions. Blue Cross and Blue Shield of North Carolina and Kaiser Permanente, United Health Group, Healthways, local YMCAs, and hospitals provided support from the private sector (Gate, 2010; National Recreation and Park Association [NRPA], 2012). Public involvement has come through local departments of health, municipal P&R agencies, state and national parks, universities, National Environmental Education Foundation, and the Centers for Disease Control (Gate, 2010; NRPA, 2012). Other supporters included the American Academy of Pediatrics, American College of Sports Medicine, Blue Ridge Parkway Foundation, Institute at the Golden Gate (IGG), and Golden Gate National Parks Conservancy (Gate, 2010; NRPA, 2013).

In the early 2000s, the concept of using daily doses of “green time” as a treatment strategy to improve symptoms of attention-deficit/hyperactivity disorder (ADHD) provided support for the fledgling PP movement (Kuo & Taylor, 2004). In fact, Kuo and Taylor (2004) suggested the “doses” might take a variety of forms: a greener route walking to school, doing classwork or homework at a window with a green view, or playing in a green yard or ball field. In 2005, Richard Louv’s (2005) book *The Last Child in the Woods* helped to bring about public awareness of children’s lack of access to or interest in nature. Louv stated that “Time in nature is not leisure time; it’s an essential investment in our children’s health” (2005, p. 120). Also in 2005, a physician frustrated by “inability to affect behavior change in the clinical setting” (n.d.) created a Walk with a Doc (WWAD) program (Who We Are, n.d.). These free events have a physician provide a health talk and walk with participants to encourage a healthy lifestyle. A year later, the Children & Nature Network organization was created, bringing together people to focus on helping children have more access to nature and its benefits (Children & Nature Network, n.d.).

Around the same time, independent from the PP movement but important to note, the Exercise Is Medicine (EIM) campaign was initiated in 2007. This was a collaboration between the American Medical Association (AMA) and the American College of Sports Medicine (ACSM) as a way to encourage HCPs to discuss exercise with clients (Sallis, 2015). The goal of the EIM campaign is “to make physical activity assessment and exercise prescription a standard part of the disease prevention and treatment paradigm for all patients” (Sallis 2009). The focus of EIM is to incorporate exercise as a vital sign into the patient visit, similar to asking patients about their diet and/or smoking habits. The EIM also included a prescription component encouraging HCPs to discuss specific

components of an exercise session, which include the frequency, intensity, time, and type of exercise that should occur (Sallis, 2015).

The trend for PPs in park and recreation agencies seems to have come into its own by 2008. By this time, over 50 documented PPs had been established in the United States (Bauers, 2015). The Oregon P&R Department's Rx PLAY (Prescription Leverage for Active Youth) was one of the many programs created. Rx Play focused on preventing childhood obesity through HCPs writing children play prescriptions for fun, low-stress active playtime and referring patients to the local park and recreation department for further counseling (Matrazzo, 2014). Another program developed in 2008 was the Kids in Parks and Tracks Rx by the Blue Ridge Parkway Foundation and partners. Their aim was "to improve the health of children and the health of our parks by making existing trails more attractive and fun for novice users" (About Kids in Parks, n.d.). Further, California piloted Recreation Rx combining low-cost and free options for recreational programming with the San Diego County P&R Department (RecreationRx, n.d.). These are just a few of many programs implemented in 2008 that demonstrate the different health outcomes and operationalization of PPs across the country.

National organizations' involvement in Park Prescription

The early PP movement's efforts were documented in a report from the Institute at the Golden Gate (IGG) profiling PP in the United States (Gate, 2010). Ten years after Parks Victoria Australia developed the worldwide concept of Healthy Parks, Healthy People (HPHP), the East Bay Regional Park District instituted their own campaign in 2010. This HPHP campaign led not only to a prescription program for the Bay Area but to an instrumental partnership with the IGG. Coinciding with HPHP, Michele Obama launched "Let's Move" in 2010 with the aim to help youth lead a healthy and active lifestyle (About Let's Move, n.d.). During this same period, other nationwide organizations joined the PP movement. The National Environmental Education Foundation (NEEF) along with the American Academy of Pediatrics provided a training program for pediatricians to prescribe outdoor activities called the Children and Nature Initiative: Rx for Outdoor Activity (Louv, 2011). The focus educated pediatric HCPs to prescribe outdoor activities to connect children with local nature sites and provided HCPs training and resources to use in their practice (NEEF, n.d.). While each of these programs was different depending on community need and professional partners' expertise, each PP had a similar focus on outdoor settings as healthy spaces.

By 2011, national organizations became more involved in the PP movement through campaigns and publications. In an effort to help boost the connection between national parks and health, the National Park Service (NPS) initiated its version of the HPHP in 2011 (Sellers, 2015). While not a PP, the NPS's HPHP campaign brought attention nationally by gathering medical and park professionals to encourage people to visit parks. In an effort to provide P&R professionals examples of PP as well as evidence, the NRPA published two reports: "Prescribing Parks for Better Health" (NRPA, 2012) and "Parks Build Healthy Communities: Success Stories" (NRPA, 2013). In *The Nature Principle*, Richard Louv (2011) makes a case for vitamin N ("nature") and nature prescriptions. Louv highlights Greencare, which prescribes woodland therapy in Norway,

bringing to the forefront the mental health benefits of PP (Louv, 2011; Artz & Bitler, 2017). In addition, *Parks & Recreation* magazine featured PP as one of the five key health trends in parks (Hannan, 2012). These national campaigns and publications are the beginnings of the necessary evidence and support for the PP movement.

Park Prescription movement organizes

In an effort to organize, the IGG, along with NRPA and NPS, in 2013 brought together a group of park professionals, HCPs, and organizations to discuss supporting the PP movement. The Park Rx initiative emerged with the “goal of supporting the emerging community of Park Prescription practitioners” (About Park Prescriptions, n.d.). This is the beginning of a national coalition centered on promoting PP, providing resources, and inspiring more research. In 2013, Dr. Zarr launched DC Park Rx in Washington, D.C., not only becoming a successful model but attracting national attention with media outlets. DC Park Rx created an online searchable database of parks in the D.C. area that HCPs could access while speaking with patients to identify nearby parks. HCPs could then print one-page descriptions for patients to bring home that highlighted park amenities, features, safety, directions, and other relevant information.

In 2014, state parks began offering a free day pass with the presentation of a prescription. Both Vermont (2014) and South Dakota (2015) modeled their programs on promotion of PA from EIM (Root, 2017). Interestingly, these state park programs are some of the first to utilize EIM principles. The U.S. Surgeon General released “Step It Up!” in 2015, a call to action to promote walking and walkable communities, helping to provide backing for the PP movement (U.S. Department of Health and Human Services, 2015). The Park Rx initiative held the first National Park Rx Day in 2015, helping parks to highlight to the public the connection between their visits to parks and their health. At that time, San Francisco became the only city nationwide to adopt PP within its public health department (Seltenrich, 2015).

By 2015, over 100 PP programs existed in the United States (Seltenrich, 2015). Since 2008, most of the PPs have followed a format of having HCPs prescribe access to parks for patients to do fun PA in outdoor settings. Using a social prescription model, the Prescribe-a-bike, launched in 2016, provides patients both PA and transportation in central Brooklyn. The prescription provides a free one-year bike-share membership (Citi Bike), a free helmet, a reflector armband, access to group rides, and a journal to reflect on the experiences (“Interfaith Medical Center Launches First ‘Prescribe-a-Bike’ Program in NYC,” 2016). This iteration of PP should not be lost on park professionals as an alternative program supporting linear parks in cities with bike-share programs.

The IGG, in collaboration with local partners, convened The Health Outdoors! Forum in 2016 to bring together 200 park agencies, public health agencies, community-based organizations, and academic institutions from across the Bay Area to discuss best practices for PP (Health, n.d.). California’s momentum and initiatives have helped to develop a national discussion on PPs, with the Park Rx initiative becoming a leading resource. Not to be confused with the Park Rx Initiative, Park Rx America (formerly known as DC Park Rx) became a nonprofit in 2017, with a mission “to decrease the burden of chronic disease, increase health and happiness, and foster environmental

stewardship, by virtue of prescribing Nature during the routine delivery of healthcare” (What is Park Rx America?, [n.d.](#)). With these two organizations at the forefront, professionals have access to resources to help in developing their community PP program.

The PP movement envisions a future where public lands are connected to the American health care system, potentially incentivizing patients through insurance to be physically active in outdoor settings (Resources, [n.d.](#)). P&R professionals utilizing PP have an opportunity to foster stewardship of public lands, increase health of its constituents, and generate awareness of public parks and their managing agencies. This is not only a local, state, and national movement but a global movement to increase the health of people of all ages. While the movement is in full force and embraced by P&R professionals, the evidence of health outcomes of PP needed by HCPs has been limited. The following is a review of evidence that does exist, followed by a critique and recommendations for future practice/research for PP.

Literature review

Prescriptions for physical activity and/or exercise

More studies have been conducted on prescriptions and referrals for PA and/or exercise than on PP. Results from these studies can shed light on the successes and challenges of PP. In fact, much of the literature regarding these programs focused on promoting and increasing exercise, PA, and/or physical fitness have shown positive results (Grandes et al., 2009; Morgan, 2005; Petrella, Lattanzio, & Overend, 2007; Jimmy & Martin, 2005; Simons-Morton et al., 2001; Harrison, Roberts, & Elton, 2005).

While Exercise Is Medicine (EIM) was a recent initiative in 2007 (Berryman, 2010) and uses the term “exercise prescription,” exercise referral schemes (ERSs) have been around much longer, primarily in the United Kingdom. Similar to an exercise prescription, an ERS focuses on increasing exercise by providing a referral to an exercise professional. In fact, the National Institute for Health and Care Excellence (NICE) in the United Kingdom suggested exercise referrals provided by a primary care or allied health professional are best for those who are relatively sedentary. The exercise professional then performs an assessment and provides recommendations specific to the person based on the assessment and the individual’s goals (NICE, 2014).

The success of exercise prescriptions and ERS has been built on three main points: assessing the level of current activity, determining the stage of behavior change of the patient, and providing an individualized PA or exercise prescription. Important to these programs is reducing the amount of sedentary behavior and increasing PA, thus the population of focus for most of these programs was those who were not physically active (e.g., meeting current PA guidelines) (NICE, 2014). From a public health perspective, any improvement in PA levels among sedentary individuals may ultimately impact long-term health issues (e.g., mortality and morbidity). Since PA is considered a behavior, often evaluating the patient’s readiness to change is helpful as it provides an indication to those patients contemplating a change in their PA levels, and thus they may be more willing to adhere to advice and counseling (Jimmy & Martin, 2005).

A prescription or counseling that is individualized is more likely to facilitate behavior change leading to improved physical fitness among participants (Grandes et al., 2009;

Morgan, 2005; Petrella et al., 2007; Jimmy & Martin, 2005). When there is an individualized prescription and/or counseling/advice specific to the patient's needs, results tend to be significant. For example, Grandes et al., (2009) asked physicians to provide advice to their patients as well as individualized activity recommendations. Along with the advice, physicians were instructed to determine the patient's readiness to be active and provided additional educational material. A subset of this group also received a comprehensive PA plan. Results did demonstrate a significant increase in total PA; however, all patients still did not meet PA guidelines. Similar results were found with general practice physicians and participants who self-selected as being inactive (Grandes et al., 2009). Jimmy and Martin (2005) also indicated that while improvements were seen in PA levels in their sample of inactive adults, those who received additional counseling regarding PA saw a larger increase in PA. Thus, research suggests that providing specific activities for patients to perform at a park may be something to consider for future PP.

Individualized exercise prescriptions and referral schemes result in positive improvements in overall PA. In a review of ERS, it was noted, results tend to be more positive if the target group is ready to be active and an existing infrastructure is in place to assist the patients in improving their activity levels (Morgan, 2005). The infrastructure includes the physician providing the prescription or referral, supplying educational materials to the patients, and having a specific target as to where the patient can seek more advice with regard to increasing PA levels. In other words, having a network of experts in PA/exercise for the patient and specifics regarding what activities to perform can also improve success of a prescription/referral program.

While there were numerous studies performed prior to the EIM initiative, EIM was likely able to build on these and market exercise prescription as medicine, thus encouraging at least HCP counseling at each patient visit to address current level of PA. As with other social-prescription-based programs, EIM is not without its critics. While engaging to clinicians, it was suggested that EIM neglects the patient perspective. For example, Segar, Guerin, Phillips, & Fortier (2016) recommended that to see a significant impact, there should be more focus on ways to motivate the patient to increase PA. This "second level" idea may be what is necessary to see more significant changes in the behavior of the patients and provide evidence to the effectiveness of exercise prescription programs (Segar et al., 2016). Thus, adding yet another consideration to other prescription programs, such as PP, includes discovering ways to motivate the patient to be physically active and/or visit a park.

Prescription programs for parks

There are many anecdotal stories and case studies on park prescriptions (NRPA, 2012, 2013). These aforementioned NRPA reports (2012, 2013) provide an overview of the types and variations of social prescriptions using parks to increase positive health outcomes. Strategies for implementing PPs as well as the program plans for evaluation are discussed. Each success story cites the physical and mental health benefits of being in nature as support for the PP, but at the time of these publications few programs seem to have successfully assessed the health outcomes of their participants. The IGG

published a report providing an overview of the PP movement (mentioning the EIM, the only connection in the literature the authors found between EIM and PP; Gate, 2010). This report analyzed 13 programs through a review of materials and interviews for an overall case study of park prescriptions. Their six key findings included (a) there is tremendous enthusiasm to link outdoor/nature-based recreation with health care; (b) park programs can easily converted to health programs; (c) non-park programs have tools that can inform PP; (d) incentives increase participation; (e) there is a need for sharing lessons learned; and (f) evaluation of Park Prescriptions is in its infancy (Gate, 2010). The last finding is important as it acknowledges that more empirical research needs to be conducted on PP that demonstrates positive health outcomes from participation.

Most PP research has been with adults (Galaviz, Levesque, & Kotecha, 2013), program distribution (Petrella et al., 2007), program evaluation (Aittasalo, Miilunpalo, Stahl, & Kukkonen-Harjula, 2006), and prescription program acceptance by general practitioners (Rowland, Carlin, & Nordstrom, 2007). Of the limited studies completed with children, few have had success increasing PA in unmotivated patients (Ortega-Sanchez et al., 2004; Rowland et al., 2007), not unlike what has been noted in exercise prescription literature for children (Morgan, 2005). In addition, these researchers have not been able to provide empirical evidence on physical benefits from participation in PP.

Of the few studies published on health outcomes, there have been some mixed results. In the DC Park Rx feasibility study, HCPs wrote prescriptions for patients to visit a nearby park and provided individualized PA expectations including intensity, frequency, and time to spend exercising (Zarr, Cottrell, & Merrill, 2017). This study was conducted in an urban area with 225 participating families. The participants (children) had an increase in average weekly PA from 150 to 172 min as well as the number of days spent in parks increasing over 7–8 days during the six-month period of prescriptions written (Zarr et al., 2017). However, in a similar study with families and children, results were not significant. Christiana, Battista, James, and Bergman (2017) conducted a pilot project of an Outdoor Activity Prescription program in a small southern rural mountainous area with 70 parent–child dyads (intervention = 38; control = 32). The intervention involved an HCP talking with parent–child dyads about getting 60 or more minutes of PA in outdoor settings daily. Along with the prescription, the dyads received supportive materials, including a map of places to go for outdoor activity and strategies for parents to ensure their child would be successful at getting 60 min of outdoor PA. The results showed no significant increase in outdoor PA, which was consistent with other studies on physician prescriptions for children's PA and exercise (Ortega-Sanchez et al., 2004; Patrick et al., 2001; Rowland et al., 2007; Saelens et al., 2002). However, Christiana, Battista, et al. (2017) pointed out the study participants were already physically active, which may have contributed to the lack of significance. Future PPs may consider focusing primarily on those who are not active to see any potential impact on related health outcomes.

Rather than measure just the physical and behavioral benefits, two PP studies have focused on mental well-being. In a randomized control trial investigating potential stress reduction in low-income families, there was an incremental decrease in parental stress

the more times a family visited a park weekly (Razani et al., 2018). In another study, HCPs indicated that resources to help increase mental well-being of children were desperately needed (Christiana, James, & Battista, 2017). Clearly, there is a need for future research to investigate the potential for PP programs to impact mental health.

While only one study has examined HCPs' perspective, knowledge, and experience of PP, which can be viewed as challenges and/or barriers (Christiana, James, et al., 2017), others have investigated HCPs' views of exercise prescription programs (Rogers et al., 2002; Patel, Schofield, Kolt, & Keogh, 2011; Coffey & Gauderer, 2016; James, Hess, Perkins, Taveras, & Scirica, 2017). Authors of one study stated that "resident physicians attitudes towards counseling are important predictors of exercise counseling practices and residents reported little formal training in exercise-counseling skills" (Rogers et al., 2002, p. 843). The time it takes a physician to provide an individualized referral and consult with the patient can also be viewed as a barrier to implementing this type of program (Patel et al., 2011; Christiana, James, et al., 2017; James et al., 2017). When HCPs did use counseling or prescription programs, it was to meet a specific need such as weight loss or disease management (Patel et al., 2011) or to take into account the patient's health and ability to participate (Christiana, James, et al., 2017). Also noted as barriers for HCPs were a lack of knowledge or training (Rogers et al., 2002). Last, HCPs suggested a need to follow up with patient participation or be provided evidence the PP worked (Christiana, James, et al., 2017; James et al. 2017).

The HCPs understand that social prescriptions using parks are an appropriate tool, but they need further evidence of health outcomes from participation (Patel et al., 2011; Christiana, James, et al., 2017; James et al., 2017). Interestingly, in a study of Vermont Park Rx (Coffey & Gauderer, 2016) in which 24 HCPs wrote ~2,000 prescriptions that provided a day pass to Vermont State Parks, the researchers observed nature relatedness of the HCPs. They found that the HCPs' nature relatedness score (appreciation and understanding of nature) was not a factor in prescribing parks, indicating HCPs "did not need to be 'nature lovers' themselves in order to recognize the significance of time in nature for children and be willing to promote nature experiences for children" (Coffey & Gauderer, 2016, p. 212). In fact, many HCPs are concerned about not only the health outcomes, but whether they are sending patients to a safe park and/or quality program (Christiana, James, et al., 2017; James et al. 2017).

A critical perspective of and recommendations for Park Prescriptions

While many HCPs view PPs as worthwhile for patients, there remains much skepticism among HCPs regarding the practice. Research conducted with HCPs to understand their perspectives on prescriptions and counseling for nature, parks, and outdoor PA found that HCPs see their time with patients, patient barriers to adherence, lack of empirical evidence, and awareness of the health benefits as hindering their willingness to engage in conversations with patients on these topics (Christiana, James, et al., 2017). Most HCPs have to cover a host of health issues with patients within a limited time frame (American Academy of Pediatrics, 2017). The diversity of health issues may be exacerbated for the patient population that PP would benefit the most, specifically patients who are at risk for developing chronic diseases (i.e., patients who are overweight or

obese, have high blood pressure, have high cholesterol, and so on) and manage ongoing symptoms of mental health conditions (i.e., high levels of life stress, symptoms of depression, anxiety, and so on). HCPs must triage these health factors/conditions to make sure the most pressing ones are covered with sufficient detail to assure that information is not lost on the patient. A model of competing demands has been proposed that outlines how a multitude of factors associated with the HCP and with the patient interact and vie for attention during the office visit (Jaen, Stange, & Nutting, 1994; Jaen, Stange, Tumiel, & Nutting, 1997; Nutting, Baier, Werner, Cutter, Conry, & Stewart, 2001; Stange, Fedirko, Zyzanski, & Jaen, 1994). Preventive strategies, such as PP, are therefore competing with immediate medical issues (whether acute or chronic) and other preventive strategies (e.g., nutrition, smoking cessation). One strategy to deal with the issue of time is for health insurance companies to reimburse HCPs for counseling on nature, parks, and outdoor PA. Insurance reimbursement would legitimize and prioritize the time HCPs spend on counseling with patients, especially those HCPs that are part of a group practice (Brotons et al., 2005).

Many HCPs are reluctant to prescribe nature and outdoor PA if they do not think that their patients will be able to adhere to the prescription (Christiana, James, et al., 2017). This hesitation is similar to what HCPs confront in prescribing any medication or treatment in which they have doubts about patient compliance. In fact, HCPs may even view PPs as bad practice if they believe that the patient does not have the resources to adhere to the prescription (Christiana, James, et al., 2017). These HCP perceptions of patient barriers to spending time in nature and outdoor PA (whether justified or not) include patients not having time, not having the money for equipment, not having access to nearby outdoor spaces due to transportation and availability, and not having motivation (Christiana, James, et al., 2017).

Perhaps a feasible way to deal with the apprehension of HCPs is to incorporate a referral process as was done in a small pilot study of the Rx Play in Oregon whereby the HCP refers the patient to a specialist in much the same way they would refer a patient to a cardiologist, endocrinologist, or any other medical specialist (NPRA, 2013). For this purpose, the specialist would be the local P&R department. In this way, the HCP would highlight the important health benefits of patients spending time outside and in outdoor activity while the P&R department would serve as the specialist to counsel the patient on how and where to get outside and help the patient with any other barriers faced in filling a prescription. A system of referral such as this would benefit the PP process in multiple ways: (a) It alleviates the HCP from the time it takes to counsel the patient on how to get outside for PA near where the patient lives; (b) it relieves HCPs from the need to become experts on the outdoor spaces in their entire patient region; (c) it shifts ultimate responsibility of a PP program back to the discipline that already has the relevant expertise and knowledge. One resource for referral examples is the Orsega-Smith, Payne, and Godbey 2003 study of Physical and Psychosocial Characteristics of Older Adults Who Participate in a Community-Based Exercise Program published in the *Journal of Aging and Physical Activity* (Orsega-Smith, Payne, & Godbey, 2003). A key consideration of this kind of referral process is for there to be a follow-up system whereby the P&R department reports back to the HCP regarding the patient's compliance with the prescription.

HCPs are also reluctant to prescribe any medication or treatment for which they do not feel there is enough evidence to support the effectiveness toward the intended outcome(s) (Christiana, James, et al., 2017). In general, HCPs look for this evidence through randomized controlled clinical trials (RCTs) as these are considered to be the gold standard in the medical field for showing the efficacy of newly developed medications and treatments (Charlton, 1991). HCPs may be extremely reluctant to recommend any medical intervention that has not been rigorously tested through RCTs. Currently, the practice of PPs appears to be based on face validity as there exists mostly anecdotal evidence, limited empirical evidence on the effectiveness on intended health outcomes (i.e., increased PA, improved mental health status, and so on), and no evidence from RCTs. More rigorous RCTs conducted on PPs are needed to give HCPs the foundation they need to promote the practice among colleagues. While many HCPs are aware of the health benefits of spending time in nature, many HCPs are still unaware. HCPs can create awareness among colleagues and champion the concept of PPs and counseling. Therefore, this remains a limiting factor for HCPs. If PPs are to become common practice, there may be a need for future research to “speak the language of HCPs” by conducting rigorous RCTs as well as the funding to support this research.

Is the term “park” appropriate?

To move the concept of PPs forward at the national level, a key conversation that must be had concerns messaging. While the objectives of programs around the country are very much in line with each other, the messaging is somewhat disjointed. Prescription programs exist across the United States with names such as ParkRx, Park Rx, TrailsRx, and TRACK Rx. While these names make sense considering the isolated and grassroots means by which they were formed (as discussed previously), the similar primary objectives of these programs suggest that a more consolidated movement is possible. Residents in Washington, D.C., may recognize DC Park Rx but not make the connection that TrailsRx or TRACK Rx are all part of the same movement.

As stated previously, the term “ParkRx” came about in mostly urban settings where nearby parks are the most readily available means by which residents can experience the outdoors and nature on a daily basis. Urban residents may also see parks as synonymous with nature. In nonurban areas, however, parks are not necessarily the most accessible means for residents to experience nature. In rural areas, neighborhoods consist of many different forms of green spaces (backyards, greenways, natural areas, forests, gardens, arboretums, conservancies, and so on) that are not labeled as parks and therefore may not be viewed as consistent with ParkRx.

Could a term such as “Nature Rx” or “Outdoor Rx” make more sense from a national movement perspective? This may especially be the case if the objective is to get people outside being physically active to improve health. The National Park Rx Initiative says that the intent is to “prescribe nature to improve mental and physical health,” and not to prescribe only parks. Nature that exists as “public open space” can be defined as all land reserved for the provision of green space and natural environments that is freely accessible and intended for active or passive recreation (Edwards et al., 2013). So why limit to only parks? Why not Nature Rx or Outdoor Rx? It could be argued that the

average person views the term “park” in a more limited way than the terms “nature” and “outdoors.” These terms include parks as parks are indeed nature and are the outdoors, but parks do not necessarily include other natural areas such as school grounds, a family’s backyard, or any open green space that is not within a park, even though the PP does include these as important. The semantics of messaging for a national movement is important, and research should be conducted to determine which terminology is most salient to the target audience. The commercial business arena spends a good deal of time researching product messaging prior to putting their products on the consumer market. Should the PP product be any different?

Exercise or physical activity?

PPs typically aspire for positive health outcomes, such as increasing PA or exercise behaviors. While getting people active is a worthwhile goal, how you encourage, prescribe, or research the activity can be another challenge. Two terms commonly associated with getting people active include PA and exercise. These terms, while related, have different meanings and perceptions. Specifically, PA is defined as “any bodily movement produced by skeletal muscles that results in energy expenditure” (Caspersen, Powell, & Christenson, 1985). While everyone does participate in PA, it can range from light-intensity activity to vigorous-intensity activity resulting in a change in energy expenditure (e.g., calories burned). Many basic activities are thought of as PA, such as walking, cleaning, hiking, gardening, and so on. Exercise, on the other hand, while also movement, is activity that is planned and/or structured and usually repetitive and purposeful (Caspersen et al., 1985), such as playing a sport or engaging in a group fitness class. While the terms sound relatively simple and interchangeable, encouraging a previously sedentary person to visit a park to exercise may be seen to them as going to a park to participate in sports or other high-intensity activity. Thus, PPs should consider the terminology they are using in attempts to promote parks as an outlet to increase PA participation.

Language for Park Prescription programs

PPs have a variety of stakeholders and perspectives (e.g., P&R, exercise science, public health, medicine) that may be counter to each other from a terminology point of view. A P&R professional, an exercise scientist, a public health official, and an HCP may all have differing perceptions and uses for terms “exercise,” “PA,” “play,” “sport,” and “park.” HCPs may be looking to increase fitness through exercise while P&R professionals are talking about play and sports, thinking it shares the same meaning. This may contribute to the HCP’s perspective of whether PP is worth their time to involve their patients.

Not only should there be shared terms between PP stakeholders but there needs to be recognition on how the terms may impact the patients or people trying to be served. For example, the terms “exercise” and “parks” are seen as positive by the PP stakeholder, yet the very words can be misleading or demotivating for patients. Exercise professionals often use the term “PA” when consulting with clients who are sedentary, as

the term “exercise” may be viewed as overwhelming and more sport related. On the other hand, parks may not be viewed by the patient as motivating to get healthy. Parks may have a connotation as “sporty” or “naturey,” leading to discomfort. In fact, Jimmy and Martin (2005) found that HCPs emphasized the importance of discussing with patients that increasing PA was not related to sports, but to improving health. Parks may be perceived as “nature,” in which case, fewer people are comfortable because nature is scary and disgusting (Bixler & Floyd, 1997) or they lack comfort in natural settings (James, Bixler, & Vadala, 2010). If not an athletic or outdoorsy person, using terms such as exercise and/or park may deter a patient’s participation in a PP regardless of its benefits.

National support of Park Prescriptions

Last, to move the national movement forward there needs to be as much buy-in from national member organizations in the medical and public health fields (American Public Health Association [APHA], American Medical Association, American Academy of Pediatrics [AAP], American Psychology Association, American College of Sports Medicine [ACSM], and so on) as there is from the recreation field (NRPA, the National Park Service, the IGG, and so on). Many of these medical and public health organizations have already invested themselves in the role that nature and the outdoors have on health. For example, the APHA (2013) released a policy statement titled “Improving Health and Wellness through Access to Nature” that explicitly states that HCPs should “advise patients ... about the benefits of green exercise ... nature-based play and recreation and form alliances with parks departments” (2013). Similarly, the AAP has stated that pediatricians should spend time talking to patients and families about the importance of spending time in outdoor play and where to go for outdoor play (2017).

The key to national support is collaborative partnerships that reach beyond legislative efforts to foster medical acceptance and public perception of parks as an integral part of their health care. Partnership has been the key to PP success across the country as evidenced by the number of programs and current research. However, as with any partnership, there can be a disconnect between the interested stakeholders. For example, why are there only a few PPs that have utilized EIM program principles? EIM has a focus on health outcomes and a research foundation that is supportive of prescription-type programs. On the other hand, why has EIM not reached out to P&R professionals as a key provider of low-cost and accessible spaces to increase PA participation? P&R professionals and EIM have similar goals but have not leveraged each other in a way that could be beneficial. Another example of this disconnect is the public health departments and P&R departments, both public agencies within a municipality. While there have been some successful partnerships, more departments need to communicate to help the residents of their communities lead healthier lives. The Park Rx movement needs to continue to work toward formalizing partnerships that cross departments and professional lines. The most formalized type of partnership is collaboration, where the partners involved will have some kind of written agreement outlining what each partner organization brings to the table to assure accountability (Calise, Moeti, & Epping, 2010). Many PPs started at the grassroots level through local health coalitions and

partnerships. The next step is to continue inviting partners to the table in a more formal collaborative relationship.

Behavioral change versus health outcome

Research on nature's connection to enhancing human health has been established, and PPs already utilize it as evidence for the program's existence. More clinical and larger-scale trials on PP's impact on health are needed for its acceptance as a medical treatment. In contrast to conducting more clinical trials on PP, another consideration for researchers is to approach behavioral change rather than specific health outcomes of PP participants. Some of the park and exercise prescription studies demonstrated that motivation of patients was significant to their success on a prescription program (Jimmy & Martin, 2005; Segar et al., 2016; Christiana, James, et al., 2017). While not a PP, the Walk with a Doc (WWAD) program focuses on changing behavior. WWAD participants surveyed indicated feeling more educated, exercising more, and enjoying interaction with physicians outside the clinic (Sallis et al., 2015). Therefore, behavioral change could be another measure for researchers that might show more evidence than health outcomes such as weight or blood pressure. Of course, we should still strive to ultimately measure health outcomes, but measuring behavior changes that lead to a positive health outcome would help demonstrate the value of PP to HCPs. Researchers should consider that motivation for behavior change and behavior change itself are antecedents of physical and mental health outcomes.

Pharmaceutical approach for Park Rx movement?

The enthusiasm for PPs by P&R professionals is shared with HCPs. However, enthusiasm on its own does not convince HCPs to utilize PP as a medical treatment. With the lack of documented health outcomes specifically from participation in PPs, HCPs might perceive them as an unproven program for their medical practice. Quality research and programming are more likely to garner health care system acceptance for PPs. While there is a foundation of evidence that exercise and natural settings contribute to healthy lives, continuing research on PP can be the next stage for the HCPs' acceptance and use of the program. One strategy for the PP movement and its stakeholders to move beyond enthusiasm to medical treatment is to consider mimicking the pharmaceutical industry approach. Focusing on a specific health treatment, conducting extensive research, having a shared language between professions, developing lobbying efforts for insurance practices, facilitating high-level (coordinating and collaborative) partnerships, promoting a cohesive marketing campaign, and having PP programs that utilize trained PP representatives are suggested approaches. These could change the HCPs' perception of PP as an accepted medical treatment and demonstrate P&R's contribution to well-being. Modeling the PP movement after the pharmaceutical industry is an example of how to bring about a cultural shift in the perception of nature to be holistically viewed as an integral part of health care.

Conclusion

When viewing current research on nature's benefits to health, the PP movement is acting as a bridge between the HCPs and P&R professionals. Historically, the PP movement is grassroots, finding its footing with the support of committed people and organizations. Currently, there is little evidence about health benefits of participation specifically in PP. However, that may change as the PP movement's principal stakeholders garner resources and focus on developing a research agenda. In addition, it is important to not "throw the baby out with the bathwater," as there is related research regarding ERS and a growing body of research on nature's impact to health that is supportive of PP. Along with research, collaboration that develops a shared focus, a shared language, and the ability to cross professional disciplines will determine the future of the PP movement. This article provides a historical perspective, literature review, and critical analysis to inform the future by sharing the variety and accomplishments of PP. Each PP, stakeholders, and related organizations should be commended for bringing the concept to the forefront and establishing the movement. If the goal is viewing nature as a holistic approach to health care, the PP movement is at a pivotal moment. If the movement continues on enthusiasm with a focus on parks and provides little evidence to the program's contribution to well-being, then it will remain outside of the health care system. On the other hand, if the PP movement can address these criticisms, it has the potential to make nature in parks "a standard of care."

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