

Perspectives

School recess, social connectedness and health: a Canadian perspective

Lauren McNamara*, Paige Colley, and Nicole Franklin

Brock University, Saint Catharines, ON, Canada

*Corresponding author. E-mail: lmcnamara@brocku.ca

Summary

Children need opportunities to establish positive social connections at school, yet many school playgrounds are challenged by social conflict that can undermine these connections. When children's social needs go unmet, the resultant feelings of loneliness, isolation and self-doubt can cumulatively lead to mental and physical illness. Because recess is typically the only time during the school day that children are free to socialize and play, we propose a more thoughtful way of thinking about it: from the lens of belongingness. Schools are, historically, designed for instruction. We argue, however, that we need to attend to children's social needs at school. We highlight current research from social neuroscience, belonging and social connectedness in order to delineate the pathways between daily school recess and developmental health trajectories. We then consolidate an array of research on play, social interaction and school change to suggest four areas that could benefit from consideration in research, practice and policy: (i) the culture of recess, (ii) the importance of healthy role models on the playground, (iii) the necessity of activities, options and variety during recess and (iv) the significance of space and spatial layout (indoor and outdoor). We bridge our discussion with the conception of health as described in the Ottawa Charter and emphasize the need to build alliances across sectors to assist schools in their efforts to support children's overall health needs.

Key words: health promoting schools, healthy settings, children, education, health, behavior

INTRODUCTION

Health, as described in The Ottawa Charter for Health Promotion, is a dynamic influence between people and their environment and is shaped by the settings of everyday life where people 'learn, work, play and love' (World Health Organization, 1986). Political, economic, cultural, environmental, behavioral, social and biological factors interact to shape conditions that promote or compromise health throughout the lifespan. Health promotion involves creating supportive environments and infrastructures to

optimize physical, mental and social well-being. School, therefore, is an important environment for mediating children's overall health and development as they are in this setting for a significant portion of each day (Stewart *et al.*, 2004).

In 1995, the World Health Organization established the Health Promoting Schools initiative as a way to encourage schools to work toward redefining themselves as places that promote overall health and well-being (WHO, 1997). Historically, school practices have been organized

around math, science and literacy instruction and therefore curricular pursuits tend to take precedence over all other aspects of the school (Hargreaves *et al.*, 2010; Zygmunt-Fillwalk and Bilello, 2005). According to the WHO, health promotion in schools is understood to extend beyond curricular instruction to include a reconsideration and modification of the social and physical landscapes that support better health trajectories (WHO, 1997). A health promoting school leverages support from health officers, school administrators, teachers, students, parents and community partners in efforts to promote health. It engages policies, practices and other efforts to provide an array of opportunities for all students. The goal is not only to prevent disease, but to foster lifestyles that promote feelings of happiness, social connectedness, autonomy and fulfillment. The rationale is that healthy students are not only more successful academically, but they embody healthy strategies and behaviors that remain throughout their lives (WHO, 1986). Here, in Canada, we use the term *comprehensive school health*. In other areas, the approach may be called *coordinated school health*, *healthy schools approach* or *health promoting school*. The underlying principles, however, stem from the WHO Ottawa Charter for Health Promotion (WHO, 1986).

The purpose of this article is to bring the context of school recess into the conversation of Health Promoting Schools. Recess, in elementary and middle schools in Canada, is similar to our counterparts in the USA and the UK in that it is generally understood as a part of the school day that allows a break from instruction for children to interact and engage in physically active play, free from curricular and grading boundaries (Blatchford and Baines, 2006; Holmes *et al.*, 2006; Dessing *et al.*, 2013; McNamara *et al.*, 2014). The health benefits of play, friendships and feelings of belonging are now well documented and the quality of social relationships is accepted as inextricably tied to physical and mental health (Lieberman, 2013). It is generally understood that regularly scheduled physically active breaks will contribute to both short- and long-term health benefits by reducing stress, enhancing feelings of well-being, stimulating neurological activity, increasing energy and preventing disease (Barros *et al.*, 2009; Centers for Disease Control and Prevention, 2010; Ramstetter *et al.*, 2010). Further, playful interactions with peers provide opportunities to develop and maintain positive peer relationships. It is well documented that peer relationships mediate cognitive and emotional regulation and facilitate the development of social and emotional competencies such as empathy, problem-solving, emotional regulation and coping strategies (Bagwell and Schmidt, 2011). These factors support

positive physical and psychological health trajectories, which are predictive of both academic success and overall health outcomes (Blum, 2005; Bagwell and Schmidt, 2011; Durlak *et al.*, 2011).

Yet there is a developing body of research, in Canada and abroad, to suggest that these benefits of recess are not being realized. Social conflict, in particular, has long been a significant concern during recess—specifically, exclusion, teasing, hitting, fighting, injuries, altercations, cliques, power struggles and bullying (Nansel *et al.*, 2001; Robert Wood Johnson Foundation, 2010; McNamara, 2013; Zumbunn *et al.*, 2013; McNamara *et al.*, 2014). Bullying, for example, is an international public health concern that occurs most frequently during recess (Nansel *et al.*, 2001; Vaillancourt *et al.*, 2010). Limited resources, as well, result in minimal supervision, equipment, space, organization and planning—all of which have a considerable impact on what happens on the playground. Such conditions seem to promote administrative concerns about safety, liability, theft and discipline issues (Jarrett and Waite-Stupiansky, 2009; Robert Wood Johnson Foundation, 2010; McNamara, 2013; McNamara *et al.*, 2014). The children complain of boredom, teachers complain of loitering and the combination of mixed ages, temperaments, social skills and play/socialization preferences further contribute to a context that hinders meaningful interactions and play among the children (Doll *et al.*, 2003; Pellegrini and Smith, 2005; McNamara *et al.*, 2014).

In fact, these playground challenges have been significant enough that school administrators and school districts are choosing to reduce and eliminate recess time altogether (American Association for the Child's Right to Play, 2004; McKenzie and Kahan, 2008; Slater *et al.*, 2012). To illustrate this trend in the USA, for example, the National Association for Early Childhood found, in 2001, that nearly 'forty percent of the nation's 16 000 school districts have either modified, deleted, or are considering deleting recess' [(cited in National Association of Early Childhood Specialists/State Department of Education, 2001), p. 1]. And Johnson, back in 1998, cited that school districts in Atlanta, Chicago, Connecticut, New Jersey and New York 'are opting to eliminate recess, even to the point of building new schools in their districts without playgrounds' [(Johnson, 1998), p. A1].

Given that recess is typically the only time in the school day that provides opportunity for meaningful play and socialization, the potential loss of recess has garnered considerable attention among advocacy groups, the press, parents, researchers and practitioners (most notably in the USA). In fact, the American Academy of Pediatrics Council on School Health released a policy statement (American Academy of Pediatrics Council on School

Health, 2013) recommending daily recess, insisting that there is a considerable amount of theoretical and empirical support for the physical, social, emotional, cognitive and academic benefits of recess.

However, we contend that there is a very real danger in simply mandating recess without thoughtful planning and consideration. Experiences such as alienation, exclusion and victimization can interfere with children's opportunities to connect with peers, inviting negative feelings of loneliness, isolation and self-doubt that can cumulatively lead to mental and physical illness (Leary and Baumeister, 2000; Bagwell and Schmidt, 2011; Eisenberger and Cole, 2012). Importantly, recent studies in social neuroscience can now delineate how social experiences mediate long-term impacts on health trajectories. Specifically, social experiences initiate a cascading series of physiological responses that influence the activity of the neural, endocrine, metabolic and lymphatic systems. When these systems are negatively altered, fundamental molecular processes are compromised—which can then trigger the development or progression of disease that will ultimately affect children's overall health (Eisenberger and Cole, 2012).

That we are clearly overlooking critical opportunities at recess to support children's physical and psychological health has been established in the scholarly literature. But what is less clear is how we might go about this. What we want to bring to the foreground are the cultural and contextual factors that need to be addressed, and further, how those factors might contribute to the challenges that schools are experiencing with recess. A more pressing concern, too, is reconciling the very purpose and definition of recess. Doing so will help us understand the role that the context plays in mediating children's developmental health trajectories, and in turn, develop and implement new policies and practices so that we can best support children.

As part of an ongoing action research partnership with several school boards (see McNamara, 2013; McNamara et al., 2014), our research team has spent the last few years reviewing the scholarly literature, examining policy documents, and working very closely with principals, teachers, administrators, community partners and—very importantly—students to learn as much as possible about the context of recess in elementary schools (ranging from kindergarten to grade 8). The purpose of this article is to critically reflect on our experience and provide a grounded theoretical perspective as to what such a supportive context might look like. We use the concept of belonging as a starting point. We contend that recess is a primarily social time for the children of all ages—a time to relax, to play, to catch up with friends, free from classroom and academic routines (Pellegrini and Bohn, 2004; McNamara et al., 2014). Since

children's relationships are tightly entwined with their emotional and physical well-being, the concept of belonging provides a framework for highlighting the importance of connecting with others, establishing friendships and maintaining relationships. Ultimately, their ability to connect with others is influenced by both context and skill and so their *capacity* to connect is what matters to their overall developmental health trajectories (Institute of Medicine, 2000; Bagwell and Schmidt, 2011). Therefore what follows is a review of the challenges that schools are faced with, an explanation and update on the concept of belongingness, and then a list of recommendations that are grounded in evidence from current research. Ultimately, we suggest that schools be mindful *to include recess in planning so as to contribute to the development of healthy children and of a healthy society*. This means providing opportunities for meaningful play and socialization for children of all temperaments, preferences, ages and developmental needs in a compassionate and inclusive setting.

THE CHALLENGE OF RECESS: BARRIERS TO FORMING AND MAINTAINING POSITIVE RELATIONSHIPS

In our research, we have come to appreciate that children need opportunities and support to establish positive social bonds at school. We have found that school playgrounds the world over are saddled with challenges that get in the way of forming and maintaining these connections. The catalyzing force appears to be the lack of resources allocated to recess, presumably because it is an extracurricular expense (Pellegrini and Bohn, 2004; Blatchford and Baines, 2006; Beresin, 2010; McNamara, 2013). Limited funding and attention to recess has had implications for available supervision, playground space, equipment management and organized activities—a combination that lays the foundation for boredom, tension, stress, and ultimately, social conflict. In this section, we provide a brief review of recent research on recess.

Minimal supervision

Minimal supervision has been consistently documented as a key challenge during recess (Dubroc, 2007; Pytel, 2009; Jarrett and Waite-Stupiansky, 2009; Robert Wood Johnson Foundation, 2010; Stanley et al., 2012; McNamara, 2013; McNamara et al., 2014). The ratio of supervisor to children is inconsistent, ranging from 1 supervisor to anywhere from 50 to 220 students on the playground, including kindergarteners. The inconsistencies are across countries, school boards, schools and even days. We have not been able to find any publicly

available policy documentation in this area. In our experience, we have found that the ratio of teachers to students can change very quickly if a supervisor is late or does not show up for duty at all.

Typically, in Canada and the USA, school playgrounds are staffed by a rotation of teachers. Teachers have a set number of hours that are allocated (by unions) for supervisory duty, and generally recess is their break time as well. Therefore, schools hire part-time yard duty supervisors to fill this gap and supervise the playground during recess. In addition, it appears that yard duty supervisors are not required to have any previous experience or background in child development or education and limited training. A quick search through job ads in the USA and Canada indicate that most require only a high school diploma. Others require only English proficiency.

Minimal equipment

Research suggests that equipment availability influences children's engagement and activity levels (see [Krahnstoever Davison and Lawson, 2006](#)), yet recess equipment presents various safety concerns and liabilities when the use is minimally supervised. As consequence, school administrators are uncomfortable with providing equipment due to fears of possible impending injuries and liabilities ([Knowles and Gardner, 2008](#); [Stanley et al., 2012](#); [McNamara et al., 2014](#)). They report that play structures are broken, rusty, splintered or do not meet safety standards, and further, find that equipment is difficult to manage and often goes missing. They are reluctant to purchase additional replacement equipment, especially with limited funds. They report that without proper instruction and monitoring children use equipment in a variety of ways other than intended, intensifying the risk of injury. Those schools who do provide some equipment often restrict the use of the equipment with various rules, designated locations and forms of use—often to a degree that can greatly reduce the benefit to the students.

Limited array of activities and games

Some children have difficulty negotiating an unstructured environment that does not offer much equipment or any organized or supported activities ([Doll et al., 2003](#); [Stanley et al., 2012](#); [Knowles et al., 2013](#); [McNamara, 2013](#)). Some children have a limited repertoire of games (particularly collaborative, non-competitive games) and as a result, discrepancies regarding game rules often initiate conflict. Further, children who are less capable with (or not interested in) certain competitive games may face rejection from peers and feel a sense of inadequacy, and in turn develop a preference for individual or sedentary activities.

Playground space limitations

Often playgrounds are restricted in size and do not provide enough room for children to actively play ([Huberty et al., 2012](#); [Stanley et al., 2012](#); [D'Haese et al., 2013](#); [Knowles et al., 2013](#)). With minimal space and access, high densities of students are often constricted into small areas making it difficult to engage in physically active play. The result is often an increase in sedentary behavior and social conflict. The data are minimal—in our work in urban schools it is not unusual for a church parking lot to double as a school playground. More reporting on these conditions is necessary.

Social conflict

According to children aggressive behaviors, bullying and social exclusion are perceived to be challenging aspects of recess time ([Anderson-Butcher et al., 2003](#); [Doll et al., 2003](#); [Vaillancourt et al., 2010](#); [McNamara, 2013](#); [McNamara et al., 2014](#)). Further, minimal supervision and lack of structure have been associated with these behaviors ([Vaillancourt et al., 2010](#); [McNamara, 2013](#); [McNamara et al., 2014](#)). Understandably, recess has been noted as one of the most feared times of the day for many children ([Astor et al., 2001](#); [Vaillancourt et al., 2010](#); [McNamara et al., 2014](#)). Although there is a growing body of research on prevalence rates of social conflict (particularly bullying) in schools, there is little research on prevalence rates of social conflict specifically during recess. There is a dire need for this evidence particularly because of the potential cumulative impact of negative social experiences (see [Hoza et al., 1995](#); [Bukowski et al., 2010](#)).

Taken together, these challenges at recess contribute to boredom, discipline issues, social conflict, disengagement and sedentary behavior, which, in turn, compromises the social environment and makes it difficult for children to play and interact in ways that allow them to connect positively with one another. This ability to connect positively—to develop and maintain relationships—is synergistically related to well-being. It is well documented that early social interactions are predictive of children's mental health as well as outcomes across the lifespan ([Sullivan, 1953](#); [Bukowski et al., 1993](#); [Hoza, et al, 1995](#); [Hartup, 1996](#); [Bagwell et al., 1998](#); [Doll et al., 2003](#); [Bukowski et al., 2010](#)). Adverse social interactions can lead to ineffective social skills, maladaptive coping strategies, isolation, exclusion, victimization and loneliness—key risk factors that jeopardize well-being and mobilize mental illness ([Cacioppo and Hawkey, 2003](#)). Given that mental illness is the single most disabling group of disorders in the USA, Canada, and Western Europe ([Bloom et al., 2011](#)), supporting children in their social interactions surely warrants our attention. The Centre for Addiction and Mental

Health (Centre for Addiction and Mental Health, 2012) found that nearly 70% of mental health disorders experienced by adults are a direct result of early onset mental health problems during childhood, with depression one of the leading causes of global disease burden (Walker, McGee, and Druss, 2015). Furthermore, here in Canada, mental disorders in children are ranked as one of the leading hospital care expenditures, second only to injuries (Canadian Mental Health Association, 2013).

THE NEED TO BELONG: A FRAMEWORK FOR CONCEPTUALIZING RECESS

Recess is important to acknowledge because children *need* meaningful interactions and relationships in order to thrive. Relationships and connectedness are central to all major theories of children's physical, cognitive, social and emotional development (Institute of Medicine, 2000; Bagwell and Schmidt, 2011). Social interactions mediate language development, social competence, emotional regulation, cognitive growth, self-concept and psychosocial adjustment. They provide a context for play, laughter and support. And they provide children with acceptance and understanding that contributes to a sense of connectedness and belonging that has long been recognized as a powerful contributor to healthy development.

In 1930, Alfred Adler suggested that all humans have a fundamental need to belong, and it is this 'social feeling' [(Adler, 1930), p.11] that inextricably links individuals to a social world. Ferguson explains how Adler's contribution provided the foundation for us to understand the dynamic, transactional nature of individual and community well-being—specifically, that the need to belong is met when individuals feel a sense of inclusiveness and equality with others (Ferguson, 2010). Further, because of this need to belong, people are driven to interact with others in purposeful, goal-directed activity toward that end. When conceptualized in this way, it is easier to understand why children need an array of social skills and coping strategies to enable the building and maintenance of social connections.

In 1995, Baumeister and Leary reviewed the empirical literature from social and personality psychology in search of evidence to support the belongingness hypothesis. Their groundbreaking article not only provided convincing evidence, but also an explanatory framework for understanding, more specifically, the pathways among cognitive processes, emotional responses, behavioral patterns, health and well-being. Following this seminal piece, the framework for belonging has been refined and well supported in the empirical literature (see also Gere and MacDonald, 2010, for a recent review). The collection of evidence suggests that the need to belong strongly

influences cognition, emotion and behavior. Further, threats to belonging and unmet needs have many negative consequences that can significantly influence well-being and adjustment.

More specifically, this need to maintain a sense of belonging is so tightly intertwined with our well-being that disruptions to it will influence our thinking, emotions and behaviors (Baumeister and Leary, 1995; Lieberman, 2013). For example, rejection is uncomfortable and disruptive, and those who feel rejected or betrayed often focus their attention on repairing and restoring social connections, which tax cognitive resources and compromise processing in other domains (Baumeister *et al.*, 2002; Gardner *et al.*, 2005). Further, it is well documented that social exclusion is associated with poor self-regulation, negative affect, self-doubt, loneliness, anxiety, depression and suicide (Baumeister and Leary, 1995; Baumeister, 2005; Steger and Kashdan, 2009; DeWall *et al.*, 2011). It is also linked to delinquent, risky and morally questionable behaviors (Baumeister and Leary, 1995). Even the *possibility* of rejection or betrayal consumes cognitive energy that can influence cognitive performance (Epley *et al.*, 2008; Knowles and Gardner, 2008). Conversely, feeling accepted and understood makes us happy. Feeling that sense of belonging is associated with an array of positive emotions such as elation, security, contentment and calm (Baumeister and Leary, 1995; Timmons *et al.*, 2011).

DeWall and Bushman suggest this need to belong can best be explained by evolutionary adaptation and attachment behaviors, as relationships have both survival and reproductive benefits (DeWall and Bushman, 2011). From an evolutionary basis, they explain that belonging to a group provided protection, shared resources and reproductive opportunities. It would have been difficult, they argue, for our ancestors to survive in isolation. Rejection from a group would have been akin to a death sentence. Genetic selection, then, favors attachment and closeness behaviors that promote survival and reproduction. For example, fear, separation anxiety and crying ensure that an infant remains close to the caregiver, increasing the odds that it gets the essential nourishment and protection to survive.

Further, recent research in social neuroscience is delineating just how our social experiences are dynamically intertwined with the neural, endocrine, metabolic and lymphatic systems, and in particular, how they shape our health trajectories by altering the activity of these systems. Eisenberger and Cole review a growing body of research that links social experiences to biological processes that affect the development or progression of disease, primarily via the sympathetic nervous system (SNS) and the hypothalamus–pituitary–adrenal (HPA) axis (Eisenberger and Cole, 2012). Both systems mediate hormonal reactions to stress

(the fight or flight response) as well as regulate many body processes (digestion, immunity, mood and emotion) in order to maintain homeostatic processes.

Eisenberger describes how social experiences are mediated by the same basic reward-related neural circuitry that is associated with physical pain and pleasure (Eisenberger, 2013). She highlights that our pre-human neural system was designed to avoid physical pain as a matter of survival. Eventually, mechanisms for responding to modern social dynamics advanced from this fully developed system. This helps explain why feelings of social disconnect are associated with biological and physiological responses that ultimately manifest in mental and physical illness—in other words, why rejection and loneliness are so painful. And as Lieberman (Lieberman, 2013) notes, it is why well-being will always be linked to our social connectedness.

Recess and belonging

When we view recess through the lens of belonging, it invites us to consider the ways in which we might provide children with opportunities that lead to feelings of connectedness. Interacting, making friends and maintaining friendships are major developmental tasks that become progressively more challenging as children grow. Broadly speaking, children will have difficulty initiating and sustaining connections if they do not have the capacity to do it (Bagwell and Schmidt, 2011; McNamara *et al.*, 2014). Since skills such as perspective taking, reciprocity, conflict resolution, emotional regulation and compassion develop in the context of social interactions, we argue that a good starting point is to provide children with favorable circumstances to establish and refine positive, reciprocal and cooperative interactions. But how does this translate to the playground?

We suggest the following areas for further research and practice: (i) The culture of recess: children need a playground culture that recognizes and promotes the value of play and social connectedness. (ii) Providing *guidance* instead of ‘supervision’: children need role models to foster compassion, empathy and negotiation—and stimulate culture change. (iii) Opportunities for play and socializing: children need an array of opportunities to interact with their peers in a *supported* space, and further, they need a *continuum of options from unstructured free play to organized activities*. (iv) *Thoughtful design of play spaces*: children need space, and spaces designed to encourage play and positive social interactions.

Culture change

We adopt a Vygotskian approach to argue that culture is an important mediator of children’s health (Vygotsky, 1978). Culture consists of the beliefs, values and meanings

common to the members of a particular group or society. These shared understandings are embodied in the patterns of social interactions—the conversations, routines, activities and behaviors that people engage in. Importantly, it is through these on-going exchanges that people learn from each other and generate a shared understanding of both desirable and undesirable interaction patterns. Patterns of interactions become internalized by the individual and translate to beliefs and behaviors over time, a concept referred to as cultural mediation. Cultural mediation insists that culture and cognition are inseparable—internal thoughts and external meanings are dynamically mediated by language.

Through social interactions, play exchanges and shared activities children develop their language and behaviors and begin to internalize and regulate their thinking. *What* they internalize, Vygotsky argued, depends on the opportunities they have for interaction with others, particularly with peers (Vygotsky, 1978). Because recess is a social time that typically, in many countries, takes place several times a day throughout childhood, the daily, cumulative effects of interaction patterns on the playground are likely to take root and have a significant influence on children’s beliefs, behaviors and habits—which ultimately govern their well-being and health outcomes.

Therefore, we suggest explicitly addressing the social and cultural elements of recess. Changing the social settings that surround children, as highlighted by Yonezawa *et al.*, mediates the way that children interact in those settings (Yonezawa *et al.*, 2009). In turn, their patterns of interactions change. As their patterns of interactions change, their new, shared knowledge becomes internalized and, in turn, they govern their thoughts and behaviors accordingly. Providing an abundance of positive role models has been shown to be a very effective mediator of culture change on the playground (Leff *et al.*, 2003; Ramstetter *et al.*, 2010; Burriss and Burriss, 2011; McNamara *et al.*, 2014).

Role models

Children observe, imitate and consolidate the social actions of others that further advances their thinking and actions. The availability of positive role models, then, is an essential source of knowledge for children (Bandura, 1986). During recess, the continual presence of supportive role models (generally in the form of older peers and young adults) can mediate and maintain inclusive and accepting behaviors. Our preferred term is ‘coordinator’ or ‘guide’ rather than the traditional term of ‘supervisor,’ as the concept of role model commands so much more than simply monitoring. The research indicates that—when properly trained—coordinators and guides play a large role in reducing levels of aggression, anger, bullying and

social conflict and boosting levels of compassion, inclusion, empathy, physical activity and feelings of safety and belonging (Dake *et al.*, 2003; McKenzie *et al.*, 2010; Burriss and Burriss, 2011; Knowles *et al.*, 2013; McNamara *et al.*, 2014).

Importantly, coordinators can be trained to get to know the children and their social dynamics. They can be on the lookout for children who are vulnerable, shy, unsure, unskilled or otherwise having some kind of social difficulty on the playground. This is a different role than a typical supervisor. Coordinators can be involved proactively—setting up favorable circumstances that are conducive to play and positive interaction. Thus they can *prevent* dysfunctional behaviors as opposed to reacting only when there is a problem (Wenger, 1998; McNamara *et al.*, 2014). Further, their ongoing support can allow them to be available to assist children to build and maintain relationships with peers. Support can then be provided in the form of scaffolded opportunities to play and connect with peers during recess, a concept closely related to Vygotsky's Zone of Proximal Development (Vygotsky, 1978).

This is important because, as Baumeister and Leary describe, the need to belong is met through 'lasting, positive and significant interpersonal relationships' [(Baumeister and Leary, 1995), p. 497]. It is only through interactions that children can develop, practice and refine their social and emotional skills which in turn cumulatively mediate social adjustment in later years (Doll *et al.*, 2003; Pellegrini and Smith, 2005; Bagwell and Schmidt, 2011). Again, we emphasize, the ability to create and sustain relationships is linked to mental health, and positive mental health in childhood is linked to better outcomes in adulthood (Bukowski *et al.*, 2010).

Clearly, the ratio of role models to students must be sufficient to have an impact, but there is no data to support an exact number. Practitioners that we work with have suggested the same ratio as the number of teachers to students in the classroom, which varies by the age group. More research and discussion is warranted here, as clearly large numbers of children and few distant supervisors cannot promote meaningful engagement and safety on the playground (see Olsen *et al.*, 2002; Schwebel, 2006). Furthermore, we encourage discussion of playground supervision and guidance from the lens of the United Nations Convention on the Rights of Children (UNCRC, Articles 3, 6 and 19, United Nations, 1989) with regard to children's right to play, to competent supervision, protection, safety and care.

Opportunities

The availability of role models/coordinators is necessary from a logistical standpoint as well. When thoughtfully

designed recess has the potential to provide a continuum of opportunities that range from unstructured, spontaneous play to organized, structured activities. There are considerable differences among students in schools—mixed ages, experiences, developmental needs, skills, beliefs, values and personalities that change as children change. Unsupported, these differences on the playground tend to act as a catalyst for dysfunctional social patterns such as exclusion and victimization (Craig and Pepler, 1997; Anderson-Butcher *et al.*, 2003; Doll *et al.*, 2003; McNamara, 2013).

Coordinators can organize play areas, manage equipment and keep a schedule of rotating activities (indoor and outdoor). They can be available to provide scaffolding for games, rules and social negotiation. They can ensure fair play, alter levels of competitiveness and promote enjoyment and engagement (McKenzie *et al.*, 2010; Ramstetter *et al.*, 2010; Stanley *et al.*, 2012; Butler, 2013; Efrat, 2013; McNamara *et al.*, 2014). This scaffolding is particularly important for children challenged by multiple risk factors such as maladaptive social skills, social anxiety, social cognitive deficits, exceptionalities, racial tensions or socioeconomic adversity (Anderson-Butcher *et al.*, 2003; Doll *et al.*, 2003; McNamara *et al.*, 2014).

Importantly, an array of options during recess can provide children with opportunities to discover shared factors that lead to social connectedness and a sense of belonging. A selected activity based on personal preference, social circumstances and temperament can act as a potential catalyst to bring children together, laying the foundation for future interactions and potential friendship, which can ultimately lead to feeling a sense of acceptance and belonging (Baumeister and Leary, 1995; Walton and Cohen, 2011; McNamara *et al.*, 2014).

Space

Given the extensive literature on play, recess, physical activity, mental illness and health trajectories, we are continually stunned by many of the playground spaces that we see. It is not uncommon for us to see 'playgrounds' borrowed from parking lots, sharing space with school dumpsters and lacking any equipment, stencils or grass. Such crowded, barren spaces often invite social dysfunction among the children and discipline challenges for the supervisors. We see, often, frustrated supervisors react to crowded conditions by imposing strict rules such as *No Running or Walk-and-Talk Only*, or even banning 'unmanageable' children to *The Wall* for the duration of recess (see Turner *et al.*, 2013).

Recent studies suggest that increasing playground space influences children's activity levels and promotes an engaging, effective recess environment. More space

makes it easier for children to stretch out, participate in games, use equipment and engage in more physically active play. However, increasing the size of the playground may not necessarily be an option for many schools. It is possible to reduce crowding by dividing up the student body and alternating outdoor recess times. Further, it is helpful to designate zones for a wide variety of activities that provide opportunities for children to participate in free play, active play, physical activity and quiet enjoyment (Stanley, *et al.*, 2012; D'Haese *et al.*, 2013; Knowles *et al.*, 2013; McNamara *et al.*, 2014).

Further, it is common to find urban school playgrounds lacking any natural landscape. Yet, it is well documented that engagement with nature boosts psychological well-being and improves concentration and learning (Maller *et al.*, 2006). We encourage conversation about increasing the amount of natural materials available to students during recess. With a smarter ratio of guides to students, the introduction of logs, sand, trees, hills, mounds, water and the like may be just the prescription needed to balance busy, structured lives. Doing so can provide children with opportunities for free play—to be playful, connect, be creative and use their imagination (Pellegrini and Smith, 2005; Ginsburg, 2007; Gordon, 2009).

CONCLUSION

In this article, we contend that the typical context of recess is not suitable or optimal for all children. We argue that schools have historically been organized around curricular routines and practices, literacy and math in particular, and as a result recess has been vastly undervalued in terms of health promoting opportunities during recess. The emerging body of research on recess substantiates this position as recess, in many countries, is burdened by common set of social and behavioral challenges that stem from limited resources and insufficient consideration. We highlight research that links crowded, unorganized, minimally supervised recess contexts to dysfunctional patterns of interaction that interfere with opportunities for meaningful play and social interactions—and further, we delineate the ways that such contexts may influence children's overall developmental health, in particular their social and emotional health.

We conceptualize recess through the framework of belonging (Baumeister and Leary, 1995) in order to illustrate the dynamic impact that recess environments have on children's social and emotional development that ultimately affect their well-being and quality of life. Relationships with peers can develop only when there are opportunities for them to develop—when children have a chance to freely interact and connect with peers. Given that children are

in school for a significant portion of each day, the school community is a logical place to support these relationships. For many, recess is one of the few opportunities for children to socialize and interact with their peers throughout the day (Jarrett, 2003; Dubroc, 2007). Through socialization, children learn important developmental skills, such as cooperation, sharing, negotiating, patience, language, communication, problem-solving and conflict resolution (Pellegrini and Holmes, 2006; American Academy of Pediatrics, 2013). As children engage in supportive and positive social settings they begin to learn essential social cues, rules, values, and develop an appreciation towards varying children's diverse cultures and beliefs (Gleave and Cole-Hamilton, 2012). These practiced, refined social skills can then be transferred to an array of social situations (see Frey *et al.*, 2000).

We highlight advances in social neuroscience to illustrate the inextricable role that the need to belong plays between peer relationships and psychological well-being. Specifically, human neural pathways have evolved to ensure our survival through our ability to connect with others. An inability to connect results in cascading physiological influences that manifest as physical pain and ultimately illness (Eisenberger, 2013).

We emphasize health promotion in schools by considering the thoughtful design of environmental settings that can improve social and health benefits for children. Opportunities can be created during the school day for healthy social interaction and play in order to provide a setting that buffers the risk of poor developmental outcomes, and we suggest broadly considering the culture, activities, role models and space available during recess. There is a need for a continuum of opportunities for children to engage in play—with the intention of connecting and belonging, as opposed to forms of play that are designed with the focused intention of increasing physical activity and reducing obesity rates (see Alexander *et al.*, 2012). Indeed, we show that when children are provided with a diversity of opportunities for play and socialization they are inadvertently more engaged in physically active play.

Many well-meaning interventions fail to sustain themselves because they rely on current staff to implement, often voluntarily. If we are serious about providing opportunities to support children's physical and mental health at school, then we cannot leave this responsibility to chance. Ideally, each school should have a full-time faculty member (certified teacher) hired specifically for overseeing non-instructional activities that support children's physical and mental health. The importance of a designated non-instructional teacher is echoed in the body of literature on Comprehensive School Physical Activity. Specifically, the success of programs designed to increase physical

activity depends on someone who can assume a strong leadership position and create and promote opportunities for physical activity during the school day (Erwin *et al.*, 2013). Realistically, we cannot challenge teachers to take on more and more responsibilities, and furthermore, unions protect teachers against this. Additional faculty are necessary because someone sufficiently qualified needs to carry out the logistics of scheduling, organizing and supervising—and importantly, cultivating and maintaining alliances with community partners. One of the key pillars of the Health Promoting Schools Initiative is the creation of alliances and partnerships (WHO, 1997). We emphasize that helping children is a shared responsibility, therefore to carry this out financially and logistically means sharing the responsibility of children's health with a variety of partners across sectors including public, private and non-governmental—particularly with those in the local community (see Gillies, 1998). These alliances might include local universities, regional health departments, community foundations, corporate foundations and not-for-profit corporations that focus on health and physical activity. There are considerable individual and societal costs associated with poor mental and physical health and consideration of the cumulative influences of daily recess may influence healthy behaviors and developmental trajectories and alleviate some of this burden.

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