

Introduction

Despite the well-documented benefits of a physically active lifestyle, such as reduced risk of cardiovascular disease, obesity, and type 2 diabetes (WHO, 2022), WHO (2018) states that 27.5% of adults and 81% of adolescents worldwide do not engage in the recommended levels of daily physical activity (PA). If this lack of engagement in PA persists, WHO (2022) estimates that there will be almost 500 million new cases of preventable, non-communicable diseases between 2020-2030, at a cost of \$27 billion in annual treatments. In response to this, WHO (2018) have produced a global action plan to promote PA worldwide. WHO (2020) also seek to address high levels of mental disorders through the Comprehensive Mental Health Action Plan (WHO, 2021) since 301 million people, of which 58 million are children and young people, are living with anxiety. 23 million children and adolescents live with depression and eating disorders affect 3 million children around the world (WHO, 2021). Amidst these global concerns, the concept and operationalisation of Physical Literacy (PL) has grabbed the attention of a range of stakeholders as an all-encompassing solution to promoting lifelong engagement in PL (Quennerstedt, McCuaig and Mårdh, 2020). PL has become a foundational and influential feature of policies across different disciplines such as sport, recreation and public health (Jurbala, 2015; WHO, 2018).

This essay will argue that PL could play a vital role in contributing to health if the surrounding discourse can move past definitional debate and allow interpretations of different versions of PL to be operationalised for different purposes. Firstly, it will offer an overview and discussion of two models of health, namely pathogenic and

salutogenic and propose that the two views can be complementary in forming a holistic view of health. Secondly, it will analyse the tension surrounding definitions, interpretations and deployment of PL in the context of school PE and consider how PL has been represented and constructed from different perspectives in policy, research and practice. Then it will examine how a multiplicity of physical literacies may contribute to health in different but potentially holistic and cohesive ways.

Health and Wellbeing

In 1948, WHO defined health as “a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity” (WHO, 1948). Some argue that the WHO (1948) definition needs updated as the inclusion of “complete” either excludes, or sets unrealistic expectations for the aging population and those successfully managing disease (Fallon and Karlawish, 2019). However, post-war, the inclusion of mental and social wellbeing and a development of the idea of health beyond the physical body is established. Although ‘health’ and ‘well-being’ can, and are, treated as two distinct constructs (Spratt, 2017), this essay will merge the concepts in a wider exploration and understanding of health.

Traditionally, western healthcare and, therefore, ideas of health have been dominated by a predominantly biomedical model with a pathogenic view of health focussed on the prevention and treatment of disease. (Espres, Moksnes and Haugan, 2021). In this view of health, a dichotomous classification exists between healthy/not healthy and attention is paid to identifying, and combatting, risk factors (Quennerstedt, McCuaig and Mårdh, 2020).

Arising from a critique of the pathogenic approach, Antonovsky (1979) proposed a salutogenic model of health, which conceptualises an Ease/Dis-ease continuum of health. In this understanding, no one is ever completely healthy at a given point in time but is positioned as more or less healthy on the continuum. According to the overall model, life experiences create a Sense of Coherence (SOC) that aids in activating resources for effectively coping with stressors and management of tension, which determines an individual's position on the healthy Ease/Dis-Ease continuum (Antonovsky, 1979).

A SOC has three components. These are comprehensibility, manageability and meaningfulness. The sense of comprehensibility is the belief that one can understand life events to overcome challenges. The sense of manageability is the belief that one has sufficient resources and options available to them to act. Finally, the sense of meaningfulness is a belief that events are interesting, and this provides a source of motivation (Galletta *et al.*, 2019; Jensen, Dür and Buijs, 2016).

Salutogenesis, as a theoretical framework, seeks to comprehend and enhance practices that foster the effective utilisation of both individual and collective resources to elevate health and well-being (HWB)(Eriksson and Lindström, 2006; Lindström, B. and Eriksson, M. (2009); Roy *et al.*, 2014; Roy *et al.*, 2018) Healthcare practitioners who embrace a salutogenic approach are dedicated through their practice and research to emphasise the salutary factors or resources that enable individuals to sustain or improve their HWB in the face of stressors and challenges (Antonovsky, 1979; Suominen and Lindström, 2008). In summary, salutogenesis focusses on identifying factors that promote health instead of those that pose threats to it (Klein and Vogt, 2019).

The European Health Development model (Bauer, Davies and Pelikan, 2006) delineates three distinct dimensions of health: physical, mental, and social, consistent with the WHO definition (WHO, 1946). The model demonstrates the interdependence of all three elements. For example, good physical functioning benefits mental health and improves social health by providing opportunities to connect and communicate with others. The model shows how health development processes can be observed and analysed, as well as intentionally influenced, from the two distinct but complementary perspectives of pathogenesis and salutogenesis. “In real life, salutogenesis and pathogenesis are simultaneous, complementary and interacting real-life processes” (Bauer, Davies and Pelikan, 2006, p.156).

Physical Education

Physical Education (PE) has long been recognised and utilised as an effective avenue for delivering interventions aimed at increasing regular PA (Cooper *et al.*, 2016) and thus is deemed to play a significant role in promoting HWB among children and adolescents in school (Harris, Cale and Hooper, 2020; Kirk, 2018; McCuaig, Quennerstedt and Macdonald, 2013). Additionally, it can offer opportunities to cultivate the knowledge, skills, and motivation necessary to engage in PA beyond school and throughout life (Bailey and Dismore, 2006; Fairclough *et al.*, 2002; Gu and Solomon, 2016; Jaakkola *et al.*, 2013; Lonsdale *et al.*, 2017; Shen, 2014). Quennerstedt (2019) points out that the concept of health in PE is frequently assumed to be embedded in a pathogenic model, whereby PE becomes focussed on prevention of disease. In doing so, discussion and exploration of alternative facets of health are constrained (Cale, 2020; Ennis, 2017; Harris *et al.*, 2016; Kirk, 2018; Quennerstedt, 2019). Instead, numerous scholars argue that a strengths-based

understanding of health, directed at active health development, with recognition that health is influenced by socio-cultural issues, could be the way forward for health in PE (Brolin *et al.*, 2018; Gray, MacIsaac and Jess, 2015; Kirk, 2018; McCuaig and Quennerstedt, 2016; Quennerstedt, 2019; Tinning, 2013).

Physical Literacy: Definitions and Interpretations

The concept of physical literacy has been subject to debate, which has arguably halted empirical research into its promised potential (Bailey, 2020). Despite the term 'physical literacy' having been used as early as the 1800s (Cairney *et al.*, 2019b), it was Whitehead's 2001 conceptualisation of PL (Whitehead, 2001) which generated widespread interest (Bailey, 2020). Since then, Whitehead has produced three iterations of the concept (Whitehead 2007, 2010, 2013) and established the International Physical Literacy Association (IPLA). The IPLA definition was updated in 2017 to read "PL can be described as the motivation, confidence, physical competence, and knowledge and understanding to value and engage in physical activity for life" (IPLA, 2017). Missing from this definition is reference to the philosophies of monism, existentialism and phenomenology that Whitehead (2001, 2007, 2010) claims are the foundations of PL. Monism rejects the Cartesian dualism of separate mind and body entities and instead believes that mind and body are inseparable and indistinguishable (Merleau-Ponty, 1968). Existentialists believe that we create ourselves through our interactions with the world around us (Whitehead, 2007). Phenomenology, closely related to existentialism, proposes that each individual experiences the world from a unique perspective (Husserl, 1991; Whitehead, 2010). By drawing on these philosophies to underpin PL, Whitehead (2010) redefined PL as an inclusive, holistic concept, which centred on the individual

and their experiences in the world (Shearer *et al.*, 2018). The term PL can be found in key PA and health policy documents, including the Global Action Plan on PA 2018–2030 (WHO, 2018) and the quality physical education guidelines for policymakers (UNESCO, 2015). At national level, initiatives have been introduced to promote PL in different sectors such as schools, families, communities and healthcare (Whitehead, 2019). For example, Sport Australia (2019) released the Australian Physical Literacy Framework for develop PL in sport and education, while Canada has placed PL as a foundational principle for PA for all (Public Health Agency of Canada, 2018). Despite and, perhaps, because of this global reach, the definition and underlying concepts are still subject to debate in research and policy (Shearer *et al.*, 2018). This transfers to concerns about how best to operationalise the concept in practice.

In research, two broad approaches in understanding of PL have emerged, ranging from idealist to pragmatic (Cairney *et al.*, 2019b; Edwards *et al.*, 2018; Higgs, 2010). Employing the logics of critical explanation framework (Glynos and Howarth, 2007), Quennerstedt (2019) analysed the discursive logics in PL research and policy, which characterised these opposing camps further. At one end of the spectrum of discourse, PL is deeply rooted in its philosophical underpinnings (Shearer *et al.* 2018) thereby being considered as holistic and valuable in its own right, with inseparable dimensions (Durden-Myers and Whitehead, 2018; Robinson, Randall and Barrett, 2018; Whitehead, Durden-Myers and Pot, 2018). Idealist proponents suggest PL does not have measurable outcomes and is, instead, an ongoing process. Some commentators express concern that this understanding of the concept is becoming obscured (Durden-Myers and Whitehead, 2018) as a focus on

measurable outcomes reduces the concept to merely PA and movement skills (Jurbala, 2015). At the other end of the spectrum, PL is often regarded as a clearly defined outcome of practical implementation that can be measured, for example, through fundamental movement skills (FMS), aerobic fitness and motivation tests (Cairney *et al.*, 2019b; Robinson, Randall and Barrett, 2018; Tremblay and Lloyd, 2010). This pragmatic camp contend that evidence-based practice and accountability are therefore essential. This perspective highlights a more explicit link to health and often identifies PL as a possible determinant of health (Cairney *et al.*, 2019b). Splitting the camps further, in an analysis using Actor Network Theory, Young, O'Connor and Alfrey (2021) identified four clusters of actors within the PL literature who have framed PL in different ways. These fall along a continuum between idealist and pragmatic as follows: the idealist embodiment cluster, the idealist-pragmatic policy cluster, the pragmatic health determinant cluster and the pragmatic disease prevention cluster. Because each cluster adheres to an ideology of what PL should be, alternative perspectives become restricted. The result is a mix of contested yet overlapping ideas of PL, which causes ontological instability (Young, O'Connor and Alfrey, 2021).

This uncertainty around what PL is or should be means that it can be used as an blanket promise (Quennerstedt, McCuaig and Mårdh, 2020), with hopes that range from human flourishing through the realisation of embodied potential (Durden-Myers, Whitehead and Pot, 2018) to preventing the rise of non-communicable diseases. However, due to disagreement surrounding its definition, operationalisation and measurability, there is a lack of empirical research into its outcomes in practice, which may ultimately result in PL promising everything but delivering little

(Quennerstedt, McCuaig and Mårdh, 2020; Young, O'Connor and Alfrey, 2021). Bailey (2020) also highlights the ideological investment in certain versions of PL means continued contestation and analysis of the term, which seems to have resulted in a lack of quality research for PL-informed pedagogies. Arguably, this means a 'tangible' PL for teachers (Harvey and Pill, 2018) is lacking since the support for PL from national organisations has failed to make a significant contribution to practical reforms in pedagogy, curriculum, and conceptual frameworks (Hyndman and Pill, 2017; Jurbala, 2015; Lounsbery and McKenzie, 2015). Additionally, the detailed philosophical explanations can prove to be a barrier to some practitioners' understandings and willingness to attempt implementation (Jurbala, 2015). For PL to have impact on school PE and potentially contribute to health, there is a need to move forward from debating the essence of PL (Ovens and Enright, 2021).

Physical Literacy in Practice

One potential pathway is to accept a multiplicity of physical literacies, as presented by Young, Alfrey and O'Connor (2022). The theory of cosmopolitics (Stengers, 2010) allows for the simultaneous co-existence of divergent cosmoses. The cosmoses represent different ideologies surrounding a concept. Rather than seek to unify these into a universal cosmos or identify a single ideological truth, the theory allows the concept to be understood as multiple cosmoses existing in a multiverse (Latour, 2004). Young, Alfrey and O'Connor (2022) use the theory to explore how the cosmoses of PL have come to be and what they each make possible in practice. Analysing 167 scholarly articles and 23 non-scholarly articles revealed the existence of three major PL cosmoses over time. Namely, *PL as health promoting PA*, *PL as*

motor competence, and *PL as phenomenological embodiment*. While all three aim to enhance engagement with PA and have some connection to health, they are constrained by distinct objectives and focused on addressing different issues. Given that teachers often cannot access academic publications behind paywalls, the inclusion of non-scholarly articles is helpful in establishing a wider picture of the understandings of PL.

Informed by an increase in sedentary behaviours, the *PL as health-promoting PA* cosmos actors aim to enhance PA levels to improve health and avoid pathogenic diseases linked to inactivity. This approach could be utilised to inform a health-based approach to PE in the pathogenic sense of health (Gard and Wright, 2001) but, arguably, does not play a role in promoting a strengths-based, salutogenic health in PE (McCuaig, Quennerstedt and Macdonald, 2013). Nevertheless, a recent independent evidence review commissioned by Sport England shows the positive effect of PA on diagnosed mental health problems among children and adolescents (Smith, *et al.* 2024). This could be seen as one dimension of the holistic self mutually enhancing another.

With a focus on developing FMS in the *PL as motor competence* cosmos, the problem to solve is inadequate motor competence in childhood. Excluding wider notions of skills in PE, such as creativity or tactical awareness, it is argued that this cosmos offers nothing new to PL (Robinson, Randall and Barrett, 2018) and restricts the concept of PL as something to have or not have (Young et al., 2020).

In the *PL as phenomenological embodiment cosmos*, attention is given to the human embodied dimension (Whitehead, 2010, 2019). PL is promoted as intrinsically valuable, without seeking to achieve other ends. The literature in this approach offers alternative pedagogies for providing more holistic PE experiences through which learners can develop in all domains of learning (Thorburn and Stolz, 2017; Whitehead, 2019).

Shearer *et al.* (2018) notes that common to seven leading organisations' definitions of PL are the core elements from the IPLA (2017) definition of *motivation*, *confidence*, *physical competence*, and *knowledge and understanding*, with some change of language or addition of elements to incorporate elements of cultural or environmental significance. For example, Sport Wales (2017) changed 'physical competence' to 'physical skill and included the element of 'a range of opportunities'. Young, Alfrey and O'Connor (2022) also state that the IPLA (2017) definition has received endorsement by actors across all three major cosmoses. Accepting and working within the multiverse means we abandon the idea of a superior or unified version of PL and, instead, use the problem at hand to determine what PL should be. For example, in addressing early childhood physical competence and skill development, *PL as motor competence* would be the version of choice. In the realm of PE, it is crucial then for practitioners to perceive themselves as 'active constructors, not passive implementers' of PL (Penney, 2006). Young, Alfrey and O'Connor (2022) suggest this can be done by heightening awareness of the different physical literacies, of which there are more than three, and what problem they offer to address. Identification of a 'problem' would result in an intention to provide an experience in a specific domain could guide practitioners when selecting a suitable

pedagogy. In this way, PL may contribute to a health in a range of ways by contributing to range of 'problems'. For example, seeking a solution for demotivated learners could lead to PL as motivation, which could be increased using a games-based approach (Alcalá and Garijo, 2017; Sierra-Díaz *et al.*, 2019).

A *PL as PA* approach has permeated policy and PE practice since the 1920s when concerns about less physically active lifestyles arose (Young, Alfrey and O'Connor, 2022). A systematic review shows that in childhood, increased PA participation is associated with numerous health benefits, including decreased adiposity, reductions in cardiometabolic disease risk, increases in aerobic fitness and muscular strength. This makes an unquestionable contribution to health (Lynch, 2019), albeit in a pathogenic sense. However, PL viewed *solely* as PA could result in reductionist teaching practices, thereby robbing PL of its more wide-reaching promises (Quennerstedt, McCuaig and Mårdh, 2020).

Various studies have revealed that practitioners often possess superficial or incorrect understandings of PL and do not fully grasp the holistic, embodied essence of the philosophy and therefore the operationalisation of '*PL phenomenological embodiment*' has been problematic (Almond, 2013; Young, Alfrey and O'Connor, 2022; Stanec and Murray-Orr, 2011; Stoddart and Humbert, 2017). In an article overviewing the philosophical underpinnings of PL, Pot, Whitehead and Durden-Myers (2018) gave suggestions on how philosophies may be operationalised in PE. To respect the monist foundation, it is suggested that learning experiences cross different domains. For example, a game situation would allow for application of physical competence and movement patterns in the physical domain, while tactical

discussion would relate to development in the cognitive domain. Acknowledging the existential essence would involve providing authentic and meaningful experiences and allowing a choice of challenge level or activity. Considering each learner's phenomenological individuality, leads, again to differentiation of tasks, where the teacher could draw on the Spectrum of Teaching Styles (Mosston and Ashworth, 2008) to plan these experiences. These implications for PL philosophy in practice appear to resonate with the delivery of quality PE. Indeed, according to Education Scotland (2021), the key elements of quality PE sessions are planned, learning-focussed, enjoyable, diverse and progressive. Experiences are said to be learning-focused if teachers use a range of approaches to promote learners' evaluation, analysis, creativity, and problem-solving skills. Learners should enjoy their PE experiences. This is accomplished by offering challenging, engaging, and motivating experiences as appropriate for the individuals in their context. Teachers demonstrate diversity by providing a variety of purposeful and challenging tasks. Additionally, Wilkie *et al.* (2023) state that supporting the development of PL encompasses several pedagogical aspects that align with the provision of high-quality PE and thoughtfully designed learning tasks. In their study of ten in-service PE teachers in Spain, where PL is not a main feature of PE practice, they found that the delivery of high-quality PE can facilitate and naturally complement the develop of PL. Without a knowledge of PL, the teachers in the study were still advancing PL in their learners. By employing a range of strategies and teaching styles to engage the learners, providing a wide range of activities, differentiating according to needs, assessing in an ipsative way and being aware of the affective domain, Wilkie *et al.*, (2023) suggest that the teachers, without awareness of the theory, unknowingly aligned their practice with the development of PL. Although this was a small study, it perhaps

shows a way for more teachers to facilitate development of PL attributes through high quality PE without needing to overcome the perceived esoteric philosophical barriers (Jurbala, 2015).

The core attributes of PL (*physical competence, motivation, confidence, knowledge and understanding*) are reflected in the Scottish Curriculum for Excellence (CfE) benchmarks (Education Scotland, 2017), which clarify the national standards intended in each curricular area, at each level. The PE benchmarks are broken into four categories of physical fitness, physical competences, personal qualities (which include motivation and confidence), and cognitive skills (Education Scotland, 2017). Additionally, CfE hopes for PE to prepare learners to lead 'a fulfilling, active and healthy lifestyle' (Scottish Government, 2009, p.5) in an echo of PL's element of lifelong participation. In an analysis of discourses surrounding curricula across the UK, Gray *et al.* (2021) observed that while the CfE presents a holistic conceptualisation of health, there is nevertheless evidence of a public health discourse influencing teachers' readings of curricular documents. How then might schools and teachers promote a more holistic notion of health? Arguably, this could be done through the delivery of high-quality PE, which is educative across the domains. Quennerstedt (2019) observes that where a pathogenic orientation in PE would lead to the question of 'How do we increase PA to prevent future illness?', a salutogenic orientation would ask 'How do we build learners' health resources through PA/PE?'. He argues that policy and practice need to move from PA as risk prevention, to movement as something meaningful and educative. Teachers should consider how to create enjoyable PE experiences with consideration of learners' socio-cultural backgrounds. This change in thinking about health has been reflected

in the salutogenically informed, strengths-based Australian HPE curriculum (ACARA, 2015). Although further exploration is beyond the scope of this essay, thinking and teaching beyond the physical domain through a range of pedagogies such as activist (Lamb, Oliver and Kirk, 2018), or meaningful approaches (Ní Chróinín, Fletcher, and O'Sullivan, 2018; Fletcher *et al.*, 2018) are key for teachers hoping to contribute to holistic health.

Another contribution to holistic health could come from consideration of PL and salutogenesis when planning learning experiences. Klein and Vogt (2019) have proposed how the salutogenic model might be transferred to school PE to guide teachers in designing lessons to enhance learners' SOC. SOC serves as an important personal resource, emerging in childhood and providing a protective function during school years. A strong sense of coherence in children and adolescents correlates with improved perceived health, social competence, and academic motivation, as well as decreased stress and need for medication (Braun-Lewensohn *et al.*, 2017; Idan *et al.*, 2017). To form a basis for comprehensibility, children need to experience a sense of consistency through feeling secure and accepted. Experience of self-efficacy forms the basis for the development of manageability. This can be achieved if tasks are at their developmental level and individual progress is ipsatively assessed and appreciated. Being involved in decision-making and observing how they can impact the environment allows children to begin to develop a sense of meaningfulness (Krause, 2011; Magistretti, 2016). Klein and Vogt (2019) suggest that SOC could be developed purposefully in PE by including the components in planning. In lessons, teachers need to ensure learners understand firstly, 'what to do' through clear, developmentally appropriate instruction

and learner involvement; secondly, have the capabilities to do the task by providing appropriate differentiation in tasks and finally, can make sense of the task and attribute meaning through reflection. By creating positive experiences of successfully employing coping strategies to overcome physical, mental, emotional or social stressors and tensions, learners can develop resources to enhance their SOC. For example, feeling the body relax and heart rate return to normal after a physically demanding task or calming down after a loss to congratulate the winning team in a game could contribute to develop SOC. Again, we see the elements of quality PE teaching in these strategies to develop SOC components, which show alignment to strengthening attributes of PL. Development and measurement of an intervention to explore this further would provide further insight. However, it would require tracking SOC development over a long period to determine if there were any lasting effects throughout life.

Conclusion

This essay sought to critically analyse the contribution PL could make to health. PL has become a central feature of international and national policies in the sectors health, sport and education. The continued contestation about PL's essence was analysed and the possibility of embracing '*different streams...as a marketplace of ideas*' (Bailey, 2020) was explored. When this happens, empirical research can be conducted. Otherwise, the promises of improved health, well-being, human flourishing and life-long engagement will likely become a fantasy. The role of the dominant *PL as PA* interpretation is effective in promoting risk-avoidant pathogenic health, but this is not a unique contribution from PL. If PL is to contribute to health more holistically, different understandings must be accepted and operationalised. In

the meantime, delivery of well-considered and planned quality PE aligned with PL attributes can contribute to holistic dimensions of health. While some curricula incorporate holistic ideas of health, an awareness and consideration of salutogenesis could also inform planning for quality PE and potentially contribute to health beyond the physical domain.

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