Advancing knowledge on social capital for young people's mental health

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Abstract

Background: Inequalities in young people's mental health have been documented according to social class but less is known about determinants that can buffer or mediate the relationship. Social capital has the potential to contribute to alleviating observed health inequalities. However, clarity about how it can be understood and measured in relation to mental health among younger populations remains inconsistent. **Aim:** This scoping review examined published literature to investigate how social capital has been researched for young people's mental health. **Methods:** Arksey and O'Malley's (2007) framework was the chosen methodology. Studies were included: on age (10-19 years); publication year (since 2000); language (English). Only studies using social capital as a central theme were included. No restriction was placed on mental health outcomes. Nine bibliographic databases were interrogated. **Results:** 1541 articles were screened, 793 retained for analysis and 73 articles were included. Most studies were conducted in North America and Europe. Twenty percent provided insights into how social capital should be described in relation to young people. A majority of the studies provided links between varying social capital indicators and a range of mental health outcomes (70%), however such evidence was associational. Only few studies inferred the causal direction between social capital and health (10%) and there were no dedicated studies on measurement. **Conclusions:** Findings suggest that literature on social capital and young people's mental health has grown but continues to be variously described and measured. It requires better utilisation of existing knowledge and new research to improve its application in practice.

Introduction

From the perspective of young people's health, a paradoxical situation has arisen over time. Whilst most OECD countries have seen overall material conditions improve (OECD, 2017), studies show no equivalent progress in young people's mental health (Bor *et al.*, 2014, Bremberg, 2015, Ottova-Jordan *et al.*, 2015). Given that the mental health of populations appears not to be improving in parallel with economic factors interest has increasingly been placed on a fuller range of social determinants (Donkin *et al.*, 2018). In the context of young people, it is well known that social factors at the level of family, school and neighbourhood can impact on their future health potential and there is an imperative to mitigate their potential negative impacts (Inchley *et al.*, 2016).

At a policy and research level, the social context of people's lives needs to be taken into account when thinking about the best ways of promoting health and well-being in populations (Berntsson *et al.*, 2006). It is well documented that the failure to do so has, and will continue to, resulted in varied and increasing inequalities (WHO, 2017). However, it is still true to say that whilst much is known about the extent and size of health inequalities, there is less clarity about how to address them (Jayasinghe, 2015). At an international level, interventions aiming to improve the structural changes (access to education and employment) have been determined to be the most effective (OECD, 2017). However, it is recognised that these need to be accompanied by interventions which produce supportive environments for young people to grow and develop (Sawyer *et al.*, 2012). Social capital gained prominence in the health field around 20 years ago as one means of creating these supportive environments through the facilitation of networks that are health enhancing for individuals, groups and communities. Social capital in this context refers to the processes between people that establish networks, norms and social trust (Kawachi *et al.*, 2008). Thus, people's social connections have a

significant role to play in influencing individual and community level health outcomes (WHO, 2017).

Over the last two decades much advancement in our understanding of social capital's relevance to improving health and wellbeing has been made. In the research world at least, different disciplinary perspectives remain, some preferring the educational perspective of Coleman, the sociological ideology of Bourdieu, or Putman's work framed in a political paradigm (Bourdieu, 1986, Coleman, 1988, Putnam *et al.*, 1993). However, there also seems to be common ground that the connections of different types and sizes discussed across these perspectives can be good for health. There has also been substantive development in our understanding of how social capital could work to improve health, at least at the level of theoretical proposition. For example, in 2004 Szreter and Woolcock neatly summarised the varying propositions discussed up until that date (Szreter and Woolcock, 2004) namely, the pathways that are based; on the notion of social support (Berkman *et al.*, 2000); the psycho-social effects of widening levels of socioeconomic inequality (Wilkinson, 1996); and those that are about political decisions which can lead to exclusion from material resources (Putnam, 2000). A plethora of studies, since then have helped us to: develop our conceptualisation of it; establish its links to health; and define ways of measuring it. The state of the art on what we have learnt has recently been presented in the published glossary by Moore and Kawachi (Moore and Kawachi, 2017). It provides a summary of 20 years of social capital research, helping us to understand how its taxonomy of concepts and terms has evolved. Twelve categories of social capital, often overlapping, themes, terms and conceptualisations are discussed. There is a recognition in the glossary that whilst the growth of empirical research has been useful to provide evidence of social capitals utility as a health concept, it has also presented challenges for a common approach to its implementation in practice. That said, it has often been argued that the strength of social capital lies in its

complexity, it could therefore be that different approaches need to be taken dependent on the context particularly in terms of geography and population. This scoping review was interested to explore how far the social capital literature for young people's mental health had advanced to articulate the processes involved in social capital generation and specifically to mental health outcomes. Categories included in the glossary demonstrate much has already been learnt mainly from insights arising out of adult literature. Terms notable to mention include: *bridging, bonding and linking* social capital which illustrate the different contexts in which social capital can flow: and *structural and cognitive* social capital tends to frame a *social cohesion approach* characterised by opportunities for accessing and building social networks for the common good. All terms provide insight into the processes involved in both the production of social capital and ultimately its impact on health. *Social capital interventions* is also included as a category recognising the increase in this type of research and its potential to provide more complete understandings of the social, psychological and behavioural mechanisms involved in the conversion of social capital to health. The summary suggests, despite these developments, there remains work to be done to complete the jigsaw that makes explicit the different strategies to be used to facilitate individuals and communities being to 'access and mobilise' social capital for improved health.

It has been argued that one should not assume that neither the conceptualisation nor the impact of social capital is the same across population groups or contexts (Swann and Morgan, 2002). We therefore argue that a review and mapping exercise to summarise contemporary understandings of social capital as it relates to young people is legitimate as various aspects of social capital might affect different health outcomes for different age groups. It might also contribute to an expanded glossary of terms.

Research on social capital for young people's health and wellbeing has grown over the last 20 years with a slight time lag to that published in relation to social capital among adults. There

is some empirical support in the adult literature that social capital is linked to socioeconomic inequalities in health (Mackenbach *et al.*, 2017, Uphoff *et al.*, 2013) and mental illness (Flores *et al.*, 2018, McKenzie *et al.*, 2002), but strong evidence of how social capital may have an impact on mental health is still lacking. It's potential, albeit sometimes expressed in terms of social networks, however has long been recognised. Young people who have the ability to participate in and make use of a range of social networks are more likely to achieve health and life goals (Benson *et al.*, 2006, Lerner *et al.*, 2003, Morgan, 2010). Review level studies do exist that provide insights into how social capital is linked to young people's health and related outcomes. For example, Ferguson demonstrated that families with high social capital are more likely to produce children who fare positively in areas of mental and physical health, educational attainment and formal labour-market participation (Ferguson, 2006). Parcel et al showed that social capital at home and in school interact in their effects on child's health outcomes and there is some evidence that home effects are stronger than school effects (Parcel *et al.*, 2010). More recently McPherson et al demonstrated that family and community social capital is an important construct for understanding the establishment of health risk behaviours, self-esteem and internalising and externalising behaviours in young people (McPherson *et al.*, 2014, McPherson *et al.*, 2013).

Synthesising evidence of social capital as a health promoting phenomenon is complicated as there are almost as many ways of understanding and measuring social capital as there are studies. Likewise, mental health is a multi-dimensional and complex term that in the literature is understood and measured in many ways. Nonetheless, Morgan and Haglund have argued that failure to deal with its ambiguities and complexities could inhibit the direct translation of its theoretical basis into practical actions (Morgan and Haglund, 2012). Given the growth in social capital literature in relation to young people's mental health it is important to know what lessons have been learned to advance the concept in this age group. The aim of this

scoping review was to examine social capital literature published between 2000 and 2018 to investigate how social capital has been researched in relation to young people's mental health. The specific objectives of the review were to:

1. Map the characteristics of published literature where social capital and young people were the central theme and mental health was the outcome.
2. Map the design of the selected studies against an analytical framework for theory development.
3. Synthesise how social capital has been described and used in the selected studies.

Method

The methodology for this scoping review was based on the framework put forward by Arksey and O'Malley (Arksey and O'Malley, 2007). Four stages were applied to map current knowledge and identify gaps. These were: identification of relevant literature; selection of studies; charting of data; and synthesising results. The framework is presented as a linear process; however, an iterative approach was used to ensure familiarity of the literature so that all relevant literature could be included.

Identifying relevant literature

To ensure breadth of coverage in the search nine databases were included: Applied Social Science Index and Abstracts (ASSIA); Children and Adolescent Studies, Cumulative Index to Nursing and Allied Health Literature (CINAHL); Medline; PsycARTICLES; PsycInfo; Social Care Online; Social Service Abstracts; Sociological Abstracts. The search terms for the population were identified as: young people, adolescents, youth, young adults, children, teenagers, and the search term for the phenomenon of interest as: social capital. No synonyms were used for social capital as only the literature using that specific terminology was of

interest. The initial search strategy was inclusive of all outcomes. Searches used database specific index terms where available or free text searching but limited to the title and abstract. The search was conducted in February 2017 and updated in April 2018.

Selecting studies

Criteria were used to select studies for inclusion in the review. Only studies that specifically mentioned social capital as a term either in the title or abstract were included, as the review aimed to produce a state-of-the-art map of studies dedicated to the concept. Screening rounds took a sequential approach on outcome. In the first round, all outcomes were deemed relevant. However, subsequent screening rounds excluded those studies that focussed on non-health outcomes or that described social capital as the outcome. Remaining studies were separated into two groups: mental health outcomes; and other health outcomes. Only those addressing mental health outcomes were included for further analysis. Included studies were also restricted by publication date (between 2000 and 2018) and language (English). Additionally, the WHO definition of adolescence was used to determine age inclusion (young people aged between 10 and 19). No delimiters were used on the basis of study design as different designs could be mapped on to one or more of the studies key questions. The PRISMA diagram (Figure 1) shows the process of study selection in more detail. The selection of studies was carried out independently by 2 reviewers. Any disagreements were discussed with a third member of the team.

Charting the data

A data extraction form was designed to 'chart' key items from the final set of studies. Data recorded using the form included bibliographic details of the study; population and age group studied; geographical location were the studies were carried out; the dimensions of social capital explored and the specific mental health outcome of interest. The extraction form was

also used to capture data that would allow us to map how social capital could be understood and operationalised in relation to young people's mental health.

Collating, summarising and reporting the results

The intention of the scoping review was not to synthesise evidence or aggregate findings from different studies. A three-step process were used to collating and summarising the data according to the analytical framework by Arksey and O'Malley (Arksey and O'Malley, 2007). This analytical framework was used to present a narrative account of existing literature (Arksey and O'Malley, 2007). Firstly, data extraction forms were used to report a descriptive numerical analysis of the extent, nature and distribution of studies found. Data extraction was carried out by authors independently and concordance confirmed in pairs.

Secondly, Garcia and Morgan's analytic framework for assessing theory utility was used to categorise the data (Garcia-Moya and Morgan, 2017). Four types of study design are included in this framework: description (is the concept and its related components adequately described); explanation (how extensive is the evidence that explains the links between phenomenon, in our case social capital, and the outcome of interest); prediction (how convincing are the causal mechanisms); and measurement (do valid and reliable indicators exist to measure it). All authors independently assessed individual studies to categorise them as descriptive, explanatory, predictive or measurement. Disagreements were discussed as a team.

Thirdly, a thematic analysis (Braun and Clarke, 2006) was carried out. This entailed coding studies inductively with detailed notes on how social capital had been described and used. Studies were then themed to represent different phases of social capital acquisition including the contexts within which social capital was explored. The thematic analysis was carried out

by two of the authors and then discussed and further refined by all four authors for accuracy and consistency.

Results

Map the characteristics of published literature

In total, 1541 articles were identified as potentially relevant records. After the first screening, 605 articles were excluded on the basis of age. The second-round screening classified studies into three main outcome types: health outcomes (n=317), social capital outcomes (n=184) and non-health outcomes (n=410). The health outcome category was further screened and individual studies categorised into six groups (mental health, risk behaviour, physical health, mixed outcomes, overall health, health behaviour) (Supplementary Figure 1). The sub-category of mental health was chosen for the purposes of this present study and re-screened to ensure that the articles (n=124) met the full set of eligibility criteria. 73 articles were deemed relevant for charting (Figure 1). A full bibliographic list of included studies can be found in Supplementary Table 1.

[Insert Figure 1 here: Flow diagram of study selection process]

General characteristics

The general characteristics of included studies are summarized in Table 1. The distribution of included papers showed a general increase in the number published over time. An overwhelming majority of the articles originated from researchers from countries in North America and Europe and were also primarily based on data collected in these countries. However, an increasing number in most recent years were published in China and other Asian countries. Articles that included young people between 12-17 years were overrepresented.

[Insert Table 1 here: General characteristics of the included studies]

Study design

The vast majority of studies employed a quantitative approach and within these most had a cross-sectional design (Table 1 and Supplementary Table 2). Usually, the analytic approach was to explore associations between one or two indicators of social capital and the chosen mental health outcome. A number of longitudinal studies were included but few attempted to exploit the design to determine the predictive (causal) relationship between social capital and mental health. No studies dedicated their research to further develop a set of validated measures for social capital.

Specific mental health outcomes

Mental health outcomes were wide ranging. For presentation purposes they were divided into a number of subcategories as follows: psychopathology, behavioural problems, well-being, emotional problems and psychosomatic symptoms. Approximately half of the included studies investigated more than one mental health outcome. The most commonly assessed outcomes were behavioural problems, psychopathology, and well-being. Behavioural problems contain outcomes such as externalising behaviour and difficulties in psychosocial adjustments. Psychopathology includes outcomes such as depression, post-traumatic stress syndromes and suicidal behaviour. Well-being included for example life satisfaction, quality of life, mental well-being and general health. Studies within the classification 'emotional problems' investigated internalising problems and psychological distress. The category 'psychosomatic symptoms' included explored self-reported health complaints such as fatigue, headache and insomnia. Proportions of mental health outcomes are presented in Supplementary Figure 1.

Map selected studies against an analytical framework for theory development

Following the nomenclature provided by Garcia and Morgan, included studies were reviewed and distributed into four types of studies based on their study design: description (n=14); explanation (n=52); prediction (n=7) and measurement (n=0) (Supplementary Table 2).

Description: This scoping review found relatively few papers that summarize the key aspects of social capital's definition and its complexity. Papers included here were normally expositions and debates about the propositions of known theorists from the adult literature, proffering views about the relevance to young people's worlds.

Explanation: The vast majority of included studies were classified as seeking to explain the relationship between social capital and young people's mental health through cross sectional studies with a survey design.

Prediction: There were relatively few longitudinal studies included in this scoping review and a proportion of those used a cross sectional analytic strategies that would not overcome the inability to predict causal pathways.

Measurement: No specific measurement studies were found in this scoping review. Many of the studies included did refer to established tools for measuring social capital; other studies appeared to create their own without mentioning issues of validity or reliability.

Synthesise how social capital has been described and used in the selected studies

The included studies utilised over 90 terms that reflected existing ideas and sub-constructs of social capital, many of which had been described in the glossary described above with some adaptations for relevance to young people (Table 2). Three broad themes emerged from the mapping and thematic analysis of the terms and concepts described in the included studies. These were labelled as: *initiating attachment, establishing interconnections* and *supporting community coherence*. They provided an organising structure (taxonomy) for presenting the

breadth of ways in which social capital had been used. In the context of young people, the themes seemed to represent a process for supporting young people to be both able and active in social connections for their own health and well-being. Many of the terms included under these themes highlighted the four main contexts in which the studies took place, namely family, peers, school and neighbourhood interestingly neither school nor peers where included in the Moore and Kawachi glossary as social capital contexts). Most of the included studies investigated social capital in relation to the context of family and/or neighbourhood. Based on these four contexts and the three identified themes, each paper was mapped to get a full representation of how social capital has been studied in relation to young people's mental health (Table 2).

[Insert Table 2 Themes of social capital here]

The first theme *initiating attachment* represented a range of studies that researched the importance of communication and support for young people found in close relations such as with family and teachers. Terms included in this theme was social control, support from parents, friends and teachers as well as family communication. Specifically, studies explored ideas as wide ranging as the sorts of controls parents put on informal social activities (sometimes referred to as parental monitoring) to the ease with which young people perceived they could talk to parents when needed (for example, parent-child argument). A total of 26 terms (often similar and overlapping) where used to denote these ideas.

The second theme, *establishing interconnections* included studies which examined the influence of social skills, social relations and wider social networks on mental health. Terms used included such ideas as sociability, socialisation, friendship network and dimensions of friendship. These studies appeared to represent and explore the benefit and process of being involved in a range of positive networks. Twenty-three different terms were elicited from the

included studies. Studies tended to either debate qualitatively the relevance of a concept for health or attempt to quantify the number and quality of a young person's social relations.

The final theme, *supporting community coherence* included studies which used more well-known sub constructs of social capital such as trust, reciprocity and participation in community life as seen in the adult literature. Terms included in this theme were participation, structural, trust and cohesion. In general, the studies in this theme focussed on quantitative examinations of the importance of cohesive communities for mental health among young people. It is true to say that the majority of studies included in the scoping review clustered around themes focussed on some aspect of 'community', either relating to aspects of a young person's life in their neighbourhood or at school. Many common ideas were included in this theme including such terms as community participation, perceptions of the local area (or school), feelings of trust and having a sense of belonging or being connected. Forty-three different terms were used to express concepts and ideas related to the theme. Although, terminology sometimes varied (e.g. civic participation, engagement), it often represented the same phenomena.

Discussion

The overarching aim of this scoping review was to provide an up to date map and synthesis of social capital literature published between 2000 and 2018 as it pertains to young people's mental health. The review wanted to utilise the retrieved data to increase our understanding of how social capital has been conceptualized and used for studying mental health outcomes in this age group. The recent glossary published by Moore and Kawachi (2017) goes some way to provide an answer to this but seemingly is derived from adult studies (Moore and Kawachi, 2017). Whilst many of the terms included in the glossary appeared in the retrieved literature, our review showed a broader set of terms providing an opportunity to understand the

subtleties of the concept in relation to mental health in the age group 10-19. In particular, in relation to social capital as a process.

General observations arising from included literature

In relation to the first objective, a number of general observations can be made from the findings. Firstly, it has demonstrated that interest in social capital as a mental health promoting concept for young people remains and the literature is more internationally representative. Whilst research from North America is still predominant there is an increasing international feel to the data, as knowledge from Europe gathers momentum and is also emerging from the Far East. This is important for social capital research for two reasons. At one level, it helps to support one of Bradford Hill's criteria for causality (Hill, 1965). The consistency criterion states that the likelihood of an effect is greater when findings are observed by different persons in different places and with different samples. At another level given the argument already made that the function of social capital is context specific, it is important to know whether different aspects of social capital are important in different age-groups in different population contexts and countries. A second observation is that the review was not able to shed light on whether a particular disciplinary perspective was either preferred or deemed appropriate for thinking about social capital in relation to young people's mental health. Although Morrow's early qualitative work claimed that Bourdieu's concept of sociability (the ability and disposition to sustain and use networks) provides more helpful thinking on how a young person's skills and competences help them to create networks, move into them and utilize them (Morrow, 2001). It is probably more likely however that drawing on multiple perspectives, depending on what is trying to be achieved is more productive (Bassani, 2007). In addition, others (outside of this review) argue that whatever perspective is taken, social capital only becomes relevant amongst this age group if it takes on board the need to understand contemporary youth worlds (Allan and Catts, 2012). A third observation is

that the majority of the research included is over simplistic, seldom acknowledging the complexity of social capital and how it relates to their work. Numerous authors proffer that our inability to incorporate its complexities into single studies has slowed down advancements in furthering its theoretical underpinnings (Bassani, 2007, Holland, 2009, Morgan and Haglund, 2012). The inability to do so, in part we assume is either due to the manageability of the exploration, the availability of the data to measure social capital, or the particular scope of the studies. Nonetheless, it would be helpful if future research made explicit its position in the broader landscape of social capital. In this way a clearer picture of the component parts of the social capital jigsaw could be gleaned.

Mapping studies against a framework for theoretical development.

The second objective of this review aimed to utilise the studies included in this review to provide some indication of how far a theory of social capital as it relates to young people's mental health had progressed. The use of theory in the development, implementation and evaluation of public health programmes has long been regarded as a necessity to secure effective change in population health (Van den Broucke, 2012). Within the context of a social determinants approach (social capital is seen as part of this context) some argue that not enough attention has been placed on integrating relevant social theory into public health innovations so that it can inform and transform practice (Potvin *et al.*, 2005). Our ability to integrate social capital into public health practice is therefore an opportunity and given the findings from this review, a challenge. Part of this challenge was reflected by Bassani's claim over ten years ago that social capital's utility as a theory was limited because, research within individual studies was fragmented normally because only one dimension of the concept was tested (Bassani, 2007). The studies included in this scoping review highlight that this remains the case today in the context of young people's mental health. However, that is not to say that understandings of the concept accumulated over time have not developed.

So, what did the mapping of studies against the framework tell us? The first premise of the framework is that as a pre-requisite for good theory development, the phenomenon of interest should be accurately and adequately described (Glanz and Rimmer, 2005). Our review found relatively few papers that summarize the key dimensions of social capital's definition and its complexity in relation to young people's mental health. Whilst multiple definitions of the sub-component parts of social capital existed within included studies a number of issues arose. Firstly, definitions were often taken from the adult literature with no explicit recognition that these had been adequately tested for use in youth studies. Secondly, the narrow focus of some of the studies usually utilising one or two of social capital's sub components, meant that definitional linkages were difficult to make, particularly with respect to understanding processes of social capital generation. Although some authors made attempts to ensure social capital was set within a process rather than a series of static definitions (Parcel, Dufur and Zito, 2010). Thirdly, we argue that some areas of social capital explication were under developed for example in the area of the types of social capital networks that young people perceived to be health enhancing. Despite this however, better organisation of existing knowledge could help to overcome these issues. Certainly, with respect to mental health, it has been argued that our ability to understand the process through which mental health is generated requires the exploration of multiple social capital interpretations (Scrivens and Smith, 2013). The search for a single definition may therefore neither be possible nor desirable.

The second premise of the framework states that good theory can be characterised as that which goes beyond description but also specifies relationships between variables of interest and posit mechanisms that can underlie the observed events. Our review provides some evidence that the growing literature in the field of social capital and mental health satisfies this aspect of theory. Included studies provide numerous examples of the positive

relationships between different aspects of social capital and mental health, thereby demonstrating why the phenomenon (social capital) is important. That said given the heterogeneity of both the dependent and independent variables, this could be questioned. This is theory at the explanatory level (Glanz and Bishop, 2010).

The third premise of the framework states that a theory's predictive ability arises when the causal direction of relationships can be determined. As stated in the results section, few longitudinal studies capable of dealing this were included. Although Gunther et al's study of negative life experiences provides an illustrative example of the ways in which aspects of social capital could lead to improved mental health (Gunther *et al.*, 2007). This third premise can also be satisfied when mechanisms proposed at the explanatory level are repeatedly tested in a number of different populations and contexts. The studies included in the review did demonstrate an increasingly varied context and population; however again the heterogeneity of social capital indicators used would make the Bradford Hill's consistency criteria difficult to uphold.

The fourth premise states that that a good theory is one that can be measured. Building the utility of any theory requires an iterative process of testing and re-testing of inter-relationships between one variable and another. A pre-requisite for such a process is our ability to develop valid and reliable ways of measuring the phenomenon of interest. No specific measurement studies were found in this scoping review although there are general examples outside the field of mental health (Enfield and Nathaniel, 2013). Many of the studies included did refer to established tools for measuring social capital; other studies appeared to create their own without mentioning issues of validity or reliability. In some instances, there seemed to be mismatch in the face validity of social capital measures and the stated ways of measuring it. There have been plenty of efforts to define ways of measuring social capital for young people (Paiva *et al.*, 2014), so maybe the further work that is required is to develop a standardised

methodology for selecting well-validated measures in social research (and practice). In the context of this review, it was not possible to ascertain clarity of measurement and therefore a satisfactory 'description' of social capital could not be determined. Overall, the mapping of studies against this framework demonstrated advancements in the field but also the work remaining to be done.

Social capital themes arising from the literature

One of the objectives of this scoping review was to synthesise the range of ways in which social capital had been described and used. The structure of themes resulting from our synthesis can be seen as a taxonomy that highlights the breadth of terms used to describe social capital and reinforces the idea of it as a complex, multi-faceted concept. This taxonomy is not necessarily different to the one found in the aforementioned glossary but confirms and places terms in the context of young people. The lack of consistency in language used however would infer that there is still work to be done to more precisely define the concept in the context of young people's mental health. The ability to define social capital linked to its complexity has previously been seen as a weakness (Portes, 1998), in particular to understand those ideas that are precursors and those that are consequences of investments in it (Morgan and Haglund, 2012). To increase our understanding, the data retrieved as part of our review could be used to provide clarity as to whether there was a rationale for terms used (for example as to be appropriate to a young person's world) or simply adapted from adult literature. The thematic analysis, allowed us to highlight some of the potential differences between young people and adult social capital literature. Whilst some of the concepts in our structure of themes reflected some of those summarised in the Moore and Kawachi glossary (Moore and Kawachi, 2017), they tended to be those associated with 'supporting community coherence'. For example, common terms seen in our review could be related to the terms used by Moore and Kawachi; structural (often measured as the extent of social participation)

and cognitive (related to such ideas as trust and reciprocity) social capital. In contrast, the ideas of bridging and bonding social capital where rarely mentioned as a substantive part of the research questions in our included studies or in their results but may have loosely been referred to in background text. Some authors questions that the focus on the distinction between bridging and bonding fails to reflect the multidimensional nature of social capital (Geys and Murdoch, 2010). This could increase the risk of methodological blind spots that decrease the use-value of the concept in practice as individuals might have multiple and overlapping relationships with others in their network. In sum, conceptualising social capital in the context of young people and therefore the measurement of it, maybe the same or different to that explored in adult literature. The relevance of this question however has rarely been explored and therefore, more studies are needed in order to further develop the conceptualization of social capital and how it relates to young people's mental health.

The structure of the themes in the taxonomy, and the terms included based on their use in the literature, highlights perhaps a broader set of ideas and concepts that reflect the processes involved in social capital generation for this age group. It is well known that the period of adolescence represents an intense period of development, physically, cognitively and emotionally which can impact on their well-being and social identity and their ability to form good social relations (Currie, 2019, Viner *et al.*, 2012). The studies included under the theme '*initiating attachment*' focussed on direct support, good communication and positive control in the family and at school, aligned most closely perhaps to the psycho-social mechanisms articulated by Wilkinson (Wilkinson, 1996). Their discussions centred on the processes necessary to secure sound cognitive, social and emotional functioning amongst young people which can be help for their future participation in wider social relations (Moretti and Peled, 2004). The studies included in the second theme, '*establishing interconnections*' reflected on both the skills development needed to be sociable and the participation in a wider set of

networks outside the home particularly amongst peers. As a collective the studies could be seen to fit with the notion that social capital generation requires an ability to access and be part of a range of social networks that are health enhancing. Understanding from a young person's perspective the types of interactions that are important to them is crucial to this process (Schaefer-McDaniel, 2004) and is less developed in the studies included in our review. Learning from bridging and bonding adult studies will be no doubt helpful in this endeavor. The retrieved data demonstrate the breadth of knowledge required for our ongoing and more understanding of social capital and how it works. Studies included in the final theme, *supporting community coherence'* recognize that young people's social context goes beyond geographical communities extending to school and most recently via social media. This theme is the one most aligned with adult literature with common usage of terms such as trust, safety and civic participation.

The intention of the taxonomy used to denote the themes and included terms arising from the review was to provide a means of organising the included studies. However, as the themes emerged, it became clear that individual studies could be mapped along a process (or continuum) that explore the building blocks of social capital and the intermediate and longer outcomes associated with it. The taxonomy suggests a process, supported by other literature, that; requires security and attachment in the family (and at school) that helps to build confidence and self-esteem (Grossmann *et al.*, 2008); supports young people's capacity to be more sociable, willing and able to access positive networks (Morrow, 2001) facilitates participation in a range of positive networks that build the trust that encourages continued participation (Scales *et al.*, 2011). Perhaps, this taxonomy is well suited to describe the multidimensional process of social capital for young people. There is an ongoing discussion on how the concept of social capital could be used in practice for young people (Geys and Murdoch, 2010). The taxonomy provided in our study adds to this discussion by suggesting

how it could be understood and pointing towards potential measurable outcomes for interventions. However, the structure of themes and included terms in this taxonomy needs to be further developed as we advance our understanding of social capital among young people in relation to mental health.

Limitations of the scoping review

The methodology of a scoping review was seen as strength as it provided an opportunity to assemble a state-of-the-art map of social capital literature that focussed on young people's mental health. In doing so, it enabled us to assess how the field had advanced, and what work is required to be done to facilitate its use in public health practice. There are some limitations. We chose to build our search strategy using the specific term 'social capital' as we wanted to assess what had been learnt from those who had made clear their explicit interest in this particular concept. However, it is well known that social capital is closely related to numerous other overlapping concepts. It could be argued that some of the pathways associated with bringing about cohesive communities to promote mental health, might be uncovered by tapping into those overlapping concepts. Given time and resource constraints we chose to assemble knowledge from only published literature, even though some of the insights into how social capital works may lie within practice literature which is often less likely to be published. Data required to assess social capital's readiness for practical application may not be outcome specific. The focus on mental health may therefore have excluded studies which provided insights into social capital as a health promoting concept.

Conclusions

This review confirms that there remains an interest in and an expanding knowledge base about social capital and its relation to young people's mental health. The synthesis of the

included papers provides a taxonomy, describing the multidimensional process of social

capital for young people and hence how it could potentially be targeted and measured in

interventions. However, there is also evidence that more recent studies are not learning from

the past to better theorise and measure the concept. Further interrogation of the literature

could provide the insights necessary to guide for future research and development of effective

public health practice.

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