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Chapter #7

Chapter title: Social Determinants of Health

Author: Dr Rebecca Garcia PhD, RN, MSc, CPsychol FHEA

Lecturer in Adult Nursing, Co-Qualification director, Field Lead (adult nursing).

School of Health, Wellbeing and Social Care

Faculty of Wellbeing, Education and Language Studies

The Open University, Walton Hall, Milton Keynes

England MK7 6AA

Rebecca.garcia@open.ac.uk

ORCID <https://orcid.org/0000-0002-2070-094X>

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Learning objectives:

1. Discuss the meaning of social determinants of health
2. Explain the conceptual and operational challenges of defining ethnicity
3. Identify the social determinants for perinatal mortality
4. Examine the limitations of the social determinants of health approach
5. Discuss the concept of intersectionality as an approach to addressing inequalities in health systems

Introduction

The chapter presents the Social Determinants of Health framework (SDOH), sometimes referred to as the wider determinants of health. It helps readers to understand the factors that contribute to individual health outcomes. Over two decades ago, the World Health Organization (WHO) commissioned work on the SDOH, with their publications of ‘The Solid Facts’ (Marmot & Wilkinson, 2003; Wilkinson & Marmot, 1998). Since then, there has been a growing body of health research supporting the SDOH framework, which helps explain health outcomes and health inequalities in particular (Marmot et al., 2010; Marmot & Wilkinson, 2003; Marmot et al., 2020). This chapter presents the SDOH framework, drawing on research into inequalities in perinatal mortality, evidenced in the nation of England, United Kingdom.

The chapter commences by reviewing the concept of health using a broad perspective, then describes the SDOH framework and moves on to apply the SDOH in the context of understanding inequalities in perinatal mortality in Pakistani and Bangladeshi infants who are born in England. Next, the chapter briefly critiques the SDOH, before introducing the concept of intersectionality and suggests how examining the hypothesis helps to advance the SDOH framework in both theoretical and practical ways for providers of health and social care. The term inequalities is used widely in literature discussing SDOH; however, in some countries, the word inequity is used. This chapter will use the term inequality, consistent with the UK and European literature.

Understanding health

Health outcomes are not achieved in a vacuum. Historically, deterministic thinkers such as John Watson (Watson, 1997) and Burrhus Skinner (Skinner, 1988) believed in a cause-and-effect model of health: singling out biological and chemical processes as the contributors of disease processes and ignoring social and cultural issues contributing to an individual’s health outcomes. In recent times, medical, nursing and social education has attempted to step away from this perspective and utilise a biopsychosocial approach (Engel, 1977; 2012). Hence, the thinking has evolved to examine

the contributions to health, wellbeing, and illness, which are multifaceted and combine internal (e.g. body situated as biological and or psychological processes) and external factors (e.g. socially situated, and psychological interpretation of such external stimuli). Together these factors mediate health outcomes. In this chapter, health is understood as the consequence of biopsychosocial factors contributing to mental and physical wellbeing.

The social determinants of health explained

The Social Determinants of Health (SDOH) framework suggests that health outcomes are contextualised within the wider social environment in which a person works, learns, and lives. It also incorporates a life course perspective, acknowledging that influences in early life can predispose an individual to poor health in adulthood and later life (Blane, 2006). The SDOH framework further acknowledges psychosocial processes, recognising the relationship between external stressors (e.g. financial issues) and internal responses (e.g. biological responses such as raised cortisol) (Brunner & Marmot, 2006). Since the original report on the SDOH in 1999, a growing body of research evidence supports the SDOH framework, which has been used to facilitate changes in policy and practice aimed at reducing inequality and improving health outcomes (Marmot et al., 2020). However, progress to address inequalities and improve the health of individuals and societies has been reported to be slow (Marmot et al., 2020).

The SDOH acknowledges the wider social, political, economic and environmental circumstances of individuals that contribute to their overall health outcomes (Brunner & Marmot, 2006; Marmot et al., 2020). It is widely known that access to money and resources, both individually and at a societal level, also contributes to health outcomes, seen by clear deprivation curves – showing the least wealthy experiencing the worse outcomes compared to more advantaged individuals in the same society. It is also accepted that exposure to advantages or disadvantages accumulates throughout a person's lifespan, resulting in a psychobiological response and impacting their health further and across the life course (Winning et al., 2016). For instance, an individual's perception of a certain stressor will trigger a psychobiological stress response which has been shown to have

biological consequences on the body (Hostinar et al., 2017). Therefore, individual health is influenced beyond biological factors and includes a wider set of determinants. These wider determinants interact with social, environmental, and psychosocial processes mediating health outcomes. Furthermore, a clear social gradient for health outcomes is evidenced in the context of where individuals live and the environment in which they interact. For example, those living in deprived or under-resourced areas will have worse health outcomes compared with people of the same age/ethnicity who reside in more affluent regions (Marmot, 2017b). Social gradients are evident across the world and affect life expectancy, disability and health outcomes. Differences are evident between and within countries. For example, people living in the north of England have a lower life expectancy (Manchester is 79.6 years) than individuals in south England (Camden is 86.5 years) who enjoy an extra 7 years of expected life (The Kings Fund, 2020).

Figure 1 is adapted from Dahlgren-Whitehead's widely used 'rainbow' model, showing the layered social determinants of health (Dahlgren & Whitehead, 1991). It starts at the *individual level* which accounts for fixed factors such as hereditary factors: age, sex and genetic factors. The *second level* in the model represents the contribution of an individual's lifestyle factors, including health behaviour, which may be positive and protective of health or negative and contribute to risk factors.

[insert figure 1 here]

The *third level* represents the individual's social and community networks in which they interact. The *fourth level* considers the working and living conditions and wider community services in the locality where the person lives. For example, housing conditions, education facilities, access to healthcare and basics such as the provision of food and water. The *fifth level* includes the wider environmental, socio-economic and cultural factors. The social determinants found in these five levels combine to contribute to the individual's overall health outcome.

While the SDOH framework helps conceptualise contributing factors to health outcomes, the framework does not explain how social determinants are created or maintained. This means that discrete forces that operate both within and across society, such as politics and power dynamics, are not explicit in the SDOH framework (Salway et al., 2010). Power dynamics contribute to the context and empowerment of determinants on different levels in society, such as national or local policies. For example, governments prioritise public health spending which will then increase or reduce access to services and the allocation of resources for certain health promotion and intervention programs. These decisions might also help to perpetuate inequality and poor health outcomes (Patterson, 2014).

The life course perspective is also considered in the SDOH framework (Blane, 2006). This means that a person's early life experiences, including exposure to their accumulated health behaviours, socio-economic factors, violence and abuse, advantage or disadvantage, contribute to facilitating their health through psychobiological responses (Gustafsson et al., 2014). Through longitudinal cohort studies such as the British Birth Cohort study (1958) and National Health and Nutrition Examination Study (NHANES I) and the National Health Examination Follow-Up Study (NHEFS) (1971-1974), clear relationships have been shown between early life experiences of poverty and adverse health outcomes in adulthood. For example, cardiovascular disease, diabetes, and cancer outcomes are evident and undeniable.

Studies on infant birth weight have shown that babies born with low birth weight (<2500g) often remain growth-retarded throughout their childhood and teenage years. In females, this is significant insofar that those women who do not have a growth spurt pre-menarche will be of a shorter stature in adulthood (Saigal et al., 2006; Wehkalampi et al., 2011). Shorter maternal stature then contributes to the smaller size of a baby that they deliver in the future (Collins et al., 2011; Rochow et al., 2019). Studies have also demonstrated that while there is catch-up growth in the first 12 months in babies born with low birth weight, it appears that there is a longer-term consequence of the distribution of surplus adipose tissue, insulin resistance and later, the possibility of developing type

2 diabetes mellitus (Jornayvaz et al., 2016) along with increased risks associated with developing cardiovascular disease (Antonisamy et al., 2017).

Birth cohort studies have further contributed to our understanding of the accumulated advantages and disadvantages experienced in childhood. The West of Scotland Collaborative Study (Blane et al., 1999) and the British Birth Cohort Study (1946, 1958, 1970, and 2000)(Dex & Joshi, 2005; Winning et al., 2016) suggest children with reduced height (2–4 years of age) and lower socio-economic status of the family is associated with cardiovascular disease (e.g. obesity, hypertension and dyslipidaemia) (Cohen et al., 2010; Wadsworth & Kuh, 1997). Furthermore, the foetal origins hypothesis (or early programming hypothesis) posits that there are critical stages in foetal development during pregnancy, which are mediated by factors such as the nutritional intake of the foetus, believed to be sensitive particularly during the third trimester of pregnancy. Hence, poor nutritional intake at this point in the pregnancy results in an increased risk of developing cardiovascular or endocrine problems in later life (Hsu & Tain, 2019). Taken together, these circumstances demonstrate that the determinants of health are far from straightforward and a wide range of social factors interact.

Inequalities in perinatal mortality in Pakistani and Bangladeshi women in England

This section starts with a brief explanation of perinatal mortality, then explains the conceptual challenges with defining ethnicity, before moving on to explore the SDOH framework in the context of inequalities in perinatal mortality in Pakistani and Bangladeshi infants.

Perinatal mortality

The SDOH framework is the dominant method used in public health to understand inequalities in health. It is also an efficient way to discuss perinatal mortality, which is a significant public health problem across the globe (De Bernis et al., 2016). Perinatal mortality is closely associated with maternal mortality and is accepted to be responsive to temporal changes in healthcare provision and the wider determinants of health such as general living conditions (e.g. housing and transport),

environmental factors and overall wellbeing (World Health Organization, 2015). Consequently, globally perinatal mortality is considered a proxy for the quality of a country’s healthcare system and economic resources (Gonzalez & Gilleskie, 2017).

While perinatal mortality figures have declined since 2000, there is a clear social gradient observed across the globe with less economically developed countries experiencing higher rates of perinatal mortality (United Nations Inter-agency Group for Child Mortality Estimation, 2020). However, there are also high rates of perinatal mortality observed in high-income countries such as the United States of America (USA) and the England. In addition to variances seen *within* the countries, after data are stratified by maternal ethnicity/race or country of birth, inequalities remain (Centers for Disease Control and Prevention, 2018; Office for National Statistics, 2018). Table 1 demonstrates between and within-country differences for England and the USA indicating inequalities.

Table 1: Perinatal mortality rate by country and perinatal mortality rate within country regional variation, by highest and lowest rank, measured per 1000 live births.

	England		USA	
National perinatal mortality rate Per 1000 live births	3		4	
Source: World Bank (2019) https://data.worldbank.org/indicator/SH.DYN.NMRT?locations=GB				
	Highest	Lowest	Highest	Lowest
Within-country perinatal mortality rate Per 1000 live births	West Yorkshire 6.9 ¹	Warwickshire 5.2 ¹	Alabama & Mississippi, 8.32 ²	New Hampshire 3.07 ²
Source: ¹ Office for National Statistics (2018) https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/datasets/infantmortalitybirthcohorttablesineotlandandwales				

The definition of perinatal is variously defined, depending on the country, according to an agreed criterion which is linked to the legal definitions of viability. For instance, the WHO use the parameters of 22 completed weeks of gestation and 7 days after birth (World Health Organization, 2021). In the USA the Centers for Disease Control and Prevention National Vital Statistics System uses 28 completed weeks of gestation to 7 days post-birth (Gregory et al., 2018), while in England government figures (i.e. the NHS) use 24 completed weeks of gestation and 7 days post-birth. Twenty-four weeks of gestation is England's legal threshold of viability, which is also linked to the Abortion Act (1967), referring to the age at which the foetus is thought to be able to survive outside of the mother's uterus (Llamas et al., 2018). In the USA, however, different states have various definitions for viability (Arzuaga & Lee, 2011). Consequently, this means that the legal definition of when a foetus is considered 'viable' and able to survive outside the uterus, albeit with medical aid (if this is available) varies depending on country or state law. Viability thresholds are becoming increasingly complex with advances in neonatal intensive care science and technologies supporting the survival of very preterm infants. Mortality and morbidity rates, are also far from being straightforward and adequately documented (Raju et al., 2014). Perinatal mortality refers to the death rate in infants in this age range, including stillborn and neonatal deaths (infants born live but who die <7 days old) and is calculated as a rate out of 1000 live births. In research terms, the use of various definitions across the globe makes comparisons between and among data sets and populations difficult.

Note: This chapter uses United Kingdom (UK) definitions.

The challenges of defining ethnicity

It is important to understand the impact and challenges of using race/ethnicity as a variable in health research and when considering the SDOH. The terms race and ethnicity are often used interchangeably. However, these terms are widely debated and poorly understood (Atkin, 2011).

Attitudes toward diverse racial/ethnic groups are historically and politically situated, where difference has been used to justify unequal treatment in minority groups, which may be ethnically defined. The use of these terms has been further compounded by poorly designed research, resulting in misleading findings, laws and policies that create different opportunities, which provides resource(s) for some and not others. Such practices further contribute to inequalities at all levels of society, including health outcomes (Bhopal, 2007).

The term 'race' was previously argued to be biologically determined; however, scholars now agree that to use a particular phenotype characteristic but with cultural attributes (i.e. race) is incorrect as this is socially constructed (Karlsen & Nazroo, 2011; Senior & Bhopal, 1994). On the other hand, 'ethnicity' is a term that usually includes religion and language differences, contrasted with the majority population (Bartley, 2008). Therefore, 'race' and 'ethnicity' are argued as two separate concepts: 'race' being biological and heritable whereas 'ethnicity' implies social and cultural differences (Chaturvedi, 2001). *See Chapter 15, Issues of Ethnicity, Race, and Social Status for a detailed discussion.*

Caution is needed when using ethnicity as a determinant of health. As constructed categories, 'race' and 'ethnicity' are not a risk factor per se, but the associated sociocultural and psychobiological factors (e.g. political, legal, and socio-economic) that are experienced in conjunction with certain ethnicities contribute enhanced probabilities for risk of poor health outcomes. Race or ethnicity data are collected at national levels (e.g. census data) often through force-choice boxes so that governments can measure, monitor and deliver service provision on a large scale in pre-defined categories. However, this practice contributes to inequalities when populations are not properly represented. In addition to the conceptual issues, there are further operational problems due to the heterogeneous categorisation systems used in different countries, utilising forced and fixed options. For example, the category 'Asian' in American literature broadly refers to people from south-east Asia, China, the Far East, Japan, Thailand, the Philippines and Korea (Humes et al., 2011). Whereas 'Asian' in UK literature specifies people identifying as Indian, Bangladeshi, Pakistani, Chinese, or

‘Asian other’ (Office for National Statistics, 2012). This makes a comparison between groups difficult, and in some instances, impossible.

The longitudinal UK Household Survey (2013) found differences between categories by religion, culture, beliefs, behaviour and socio-economic factors, and the extent to which people assimilate and or become acculturated to the host country (Nandi & Platt, 2013). It is now widely accepted that ethnicity is self-defined and incorporates physical appearance, shared ancestry and territories, culture, language and religion (Chattoo & Atkin, 2019). Furthermore, the majority of health services research focuses on ethnic ‘difference,’ making comparisons against the majority (typically White) populations (Cohen, 2020). Consequently, by focussing on difference compared to the majority population this research method unintentionally ‘others’ the minority group. In other words, this ‘outs’ the minority population as ‘different’ to the majority population, which further perpetuates ideas of difference and misses opportunities to understand similarities between and among people.

Culture

It is important to consider the contribution of culture when defining ethnicity. Like ethnicity, culture is a complex and debated concept (Marsella & Yamada, 2010). There are two important distinctions in the debate: culture being constructed from an external human experience; conversely, culture being shared beliefs and practices that unite or separate humans. These approaches have resulted in many definitions being proffered to explain ‘culture’, including culture being learned, or a learned experience attending to meaning-making, being an institutional group, addressing meaning-making or a collective group of systems and subsequent meanings (Cohen, 2020).

Arguably, culture needs a structural reality. For instance, external objects used to suggest cultural group membership, such as dress code, and a conceptual reality as seen in attitudes toward group membership – which are themselves dynamic and mediate a shared understanding of the cultural identity and subsequent behaviour, including a shared language (Markus & Hamedani, 2010).

Cultural practices such as accepted marital norms, for instance, being a single mother (associated with poverty and a lack of social support) or consanguineous marriage (associated with genetic risk) are shown to be an increased risk for adverse pregnancy outcomes (Memon & Rahman, 2020). Culture is therefore dynamic and subjective.

Language

Language also contributes to our self-defined culture and ethnicity. Shared meanings of cultural practices such as our attitudes and behaviours are exchanged through common verbal/non-verbal language, body language, dialects and slang (Markus & Hamedani, 2010). Furthermore, language informs our thinking, and concepts in one language may not be present in another (Triandis, 2010). For instance, the perception of ‘stress’ in English-speaking countries may be different in other languages: **I**n Urdu (Pakistan) ‘*pereshaan*’ means ‘tense’, and in Bengali (Bangladesh) ‘*oshanti*’ means ‘no peace.’

Limited language proficiency by ethnic minority women not born in the host country is commonly cited in research to explain barriers to accessing healthcare services (Marie et al., 2019; Phillimore, 2016). Language proficiency may further discriminate against expectant migrant women, with reduced knowledge of local healthcare provisions or perceived or real entitlements, which can act as a barrier to sharing health information. Also, -reduced educational attainment and lower levels of health and numeracy literacy often further exacerbates disadvantage (Lu & Halfon, 2003). In the UK, the NHS offers language translation services to meet the needs of its diverse population. However, the Centre for Maternal and Child Enquiries (CMACE) (2015) studies revealed that in 83% of perinatal deaths, there was no professional translation service offered to women who were not proficient in speaking English, resulting in unsatisfactory care (Cross-Sudworth et al., 2015). Consequently, translation services are now routinely offered during antenatal checks for non-

English speaking women accessing maternity care in England. This is offered as part of the NHS maternity care package and no fee is paid by the pregnant mother.

Reviewing the research evidence on patient experiences of using translation services reveals that interpretation goes beyond the conveyance of information between patients and healthcare staff. There have been questions raised regarding the accuracy of translation services in healthcare practice, in particular with slang or dialects and the subjective experience and subsequent influence of the interpreter. These circumstances have resulted in the standard use of medically trained translation services professionals (Ali, 2003; Regmi et al., 2010). Sometimes, healthcare staff use family members to translate and this practice has been highlighted as being inappropriate, due to the sensitive nature of questions in maternity care (and numerous other health conditions, such as female reproductive medicine, contraception and sexual health). There is also a risk of misinformation due to poor health literacy, or the filtering of information between and among family members (Cross-Sudworth et al., 2015). Research shows that South Asian women may be fearful of stigmatisation or breaches of confidentiality if speaking with members of their own community about personal health-related issues (Garcia et al., 2020a). Taken together, it is evident that limited language proficiency is a barrier to accessing quality maternity care; it is also more complex to resolve than by a simple translation. Care is needed when developing potential support services for migrants, and including people from their community during the development of possible service design further offers nuanced understanding. This practice helps to ensure that the proposed support service meets the needs of the women and is accessible to the migrant family in ways that are appropriate and acceptable to them. For example, a recent breast-screening leaflet was developed in a local area, with good intentions, but using eloquent and elaborative Urdu language that everyday British Pakistani women did not understand was not therefore helpful. These types of unintended events must be avoided.

Religion

When discussing ethnicity and culture, it is important to consider the implicit and explicit contributions that religion may make to our health beliefs and behaviours (Raman et al., 2016). Religion is also a contested term. Typically, in layman's terms, religion may refer to affiliation with a deity, as seen in Christianity or Islam, while Buddhism and Taoism have no deity, making operationalisation of religion a challenge (Flannelly et al., 2014). Box 1 explores religion and spirituality.

Box 1: Defines religion and spirituality and considers the main differences between them.

The difference between religion and spirituality is not well understood (Jones, 2018). The terms are widely contested, and many definitions can be found, depending on the context used. For instance, reflect on texts about the end of life care or how spirituality or religion might influence health beliefs and health behaviour among different populations.

The Cambridge dictionary (2021) defines religion as having beliefs in God(s) that includes worship, but this description fails to acknowledge the subjective experience of religion. Yinger's (1970) widely known definition of religion states: "Religion is a system of beliefs and practices by means of which a group struggles with the ultimate problems of human life" (Yinger, 1970, pg 7).

On the other hand, "Spirituality is the dynamic dimension of human life that relates to the way persons (individual and community) experience, express and/or seek meaning, purpose and transcendence, and the way they connect to the moment, to self, to others, to nature, to the significant and/or the sacred" (Best et al., 2020, pg 2). Tanyi (2002) claims "spirituality is a personal search for meaning and purpose in life, which may or may not be related to religion (Tanyi, 2002, p. 690).

Religion is socially constructed. Therefore, it is not objective or measurable, but instead a framework of ideas, narratives, practices and symbols that are used to help people make sense of their world. While religious belief is private, it is often a collective phenomenon (Bidwell et al., 2016). When using religious ideas and symbols the person might follow defined routines as stated

in the religious text, in hope, praise or thanks of a matter that is of concern to them (e.g. health of a close relative). Religion may intersect with cultural beliefs, practices or behaviours.

Spirituality is also socially constructed. It is subjective and difficult to define and measure.

Spirituality, however, is eclectic insofar that ideas are taken from numerous influences that are not necessarily religious. For instance, ideas from Shamans, Buddhism, Taoism or wise words from a grandparent, a walk in nature, or spending time with close family/friends are all examples of ways that help people make sense of their world and meet their spiritual needs.

Simply stated, religion is a shared experience, whereas spirituality is a private experience (Bidwell et al., 2016; Ross et al., 2018).

Note: I am sure you can appreciate we could debate this topic for an age!

Returning to our example of inequalities in perinatal mortality seen in Pakistani and Bangladeshi infants in the UK, two dominant religions are present in this population: Christianity (White British) and Islam (Pakistani and Bangladeshi). Religious and cultural beliefs contribute to differences in health beliefs and health behaviours. For example, Muslims may believe that illness is a test from Allah, facilitating cleansing after sinful behaviour and offering a future based reward. The Bible (Christianity), on the other hand, suggests that illness is a punishment from God. Some Muslims and Christians believe illness is God's will, while others may believe it leads to purification, and adverse pregnancy outcomes may be explained as "the will of God" (Garcia et al., 2020a).

Concerning termination of pregnancy (or abortion), some Christians or Muslims may not practise this option because of their faith. For Muslim women, it might only be considered if there is a significant risk to the mother (in which case this needs to be completed within 120 days, consistent with the Islamic fatwa¹). However, fatwas are commonly misunderstood. Consequently, there is a widely-held misunderstanding that Muslim women hold a 'no termination of pregnancy' attitude (Shaw, 2012). This then has an impact on the uptake of genetic screening services and is cited as a

¹ A fatwa is a religious rule, which becomes enmeshed in Islamic law (sharia) by religious scholars but is not explicitly mentioned in a Hadith or the Qur'an (Koenig, McCullough, & Larson, 2001).

reason to explain the higher rates of congenital anomalies found in Pakistani infants (Koenig & Al Shohaib, 2014). For example, Muslim mothers may not intentionally seek anomaly screening because, regardless of the test result, they do not want to undertake a termination of the pregnancy. However, some Muslim mothers may participate in anomaly screening to gain knowledge of a child with congenital anomalies to prepare for the infant, but they will not terminate the pregnancy. Mothers with unclear immigration status may not access maternity services at all. Together, these circumstances highlight the complex relationships between ethnicity, culture and religion, immigration status, and their impact on health beliefs and health behaviours that influence birth outcomes.

<INSERT NARRATIVE 22.2 HERE>

Asma's story

This anecdotal narrative is centred on a young 23-year-old Bangladeshi woman named Asma who lives in a large city in northern England. The city has a large population of Pakistani, Bangladeshi and Indian residents, in addition to other migrants. Asma was born in Bangladesh and speaks Sylheti. Her English language proficiency is quite poor, as the family members speak Sylheti at home and in their community.

Asma was married at 19 years old to her husband, Hasan, who was aged 29 when they were wedded in a consensual and arranged consanguineous (cousin) marriage. Hasan works as a local restaurant owner. After they were married, Asma moved into Hasan's family home; Hasan being the only son in the family, as such there was a cultural expectation that he would remain living with his ageing parents (Nasreen and Sadiq), to support them through their older years.

In addition to Hasan and his parents, there is also Hasan's younger sister, Fathida, who still lives at the parents' home. Fathida is 21 years old and she has several medical problems, related to genetic malformations. Their home is a moderate-sized 4-bedroom terraced property, in a neglected and under-resourced part of the town. Asma and Hasan have their own bedroom, but share all other living spaces with the rest of the family. As is typical in South Asian families, Asma was expected to contribute to the personal caring, housework and cooking responsibilities in the family home.

The maternity unit was situated on the other side of the town and required a 60-minute journey on two buses. Asma preferred to go with her husband using a taxi, so he could help translate English to Sylheti, helping Asma better understand the healthcare staff's communication related to her prenatal visits. However, it was difficult to find an appropriate appointment time as it meant Hasan would have lost valuable working hours (and income) while he accompanied his wife.

Asma was 29 weeks pregnant with her first baby when she arrived at the clinic. To date, her pregnancy had been fairly uneventful, with only the suffering of morning sickness since she was 10 weeks pregnant. Although the sickness had continued through her pregnancy, Asma's mother-in-law, Nasreen, had assured Asma that this symptom was normal. Nasreen encouraged Asma to drink hot buttermilk (melted butter in milk) every day to help with a "smooth delivery" and the delivery of a "golden skin tone" of the baby. As a consequence of drinking buttermilk (and other calorie-dense cultural food), Asma had gained excessive weight during the 29 weeks of her pregnancy, despite her feelings of nausea. Asma attended few of her prenatal check-ups and only attended her first appointment when she was 16 weeks pregnant. Consequently, Asma had missed all the early screening opportunities and pregnancy care advice. Nevertheless, Asma did not recognise this concern as a potential problem, as pregnancy is considered 'normal' for women in her community. Asma was also busy with the housework and looking after Nasreen and Sadiq. In addition, the maternity unit was considered too far away, and she struggled to understand what the staff were trying to communicate. Hence, there were several barriers related to her accessing timely maternity care. In the meantime, at home, other important events were occurring.

It was Sadiq's 70th birthday, and the family had arranged a big gathering to celebrate. Asma had been busy for several days with preparations for the event. She was cleaning the house and assisting with preparing food. They were expecting more than 20 guests so there was much to be done. All family members were looking forward to the event. However, during the midst of the birthday-related preparations, Asma started to get stomach cramps and had not noticed the baby's movements during the past few days. Asma believed that any adverse event was 'the will of God' and she placed her trust in Allah. Moreover, with the 70th birthday event planned and so many guests expected, she decided it was best not to say anything. As the day wore on, Asma's cramps got worse and she eventually told Nasreen and Hasan, but Nasreen advised her that 'the baby is asleep', so, with this reassurance, Asma went to lie down quietly on the sofa. Suddenly, Asma felt dragging pains from her groin which accompanied her cramps. She quietly took herself off to the bathroom so as not to make a fuss and spoil the birthday event. Hasan's cousin, Samira, suddenly shrieked unexpectedly from the bathroom: "Quickly! Come!" Asma

was found barely conscious, with a pool of blood on the floor. An ambulance was immediately called and Asma and Hasan were transported to the nearby hospital. After an examination, it was determined that Asma had started premature labour at 29 weeks and the baby had sadly died.

Prompt questions.

1. How did language impact Asma's health care experience?
2. How did cultural beliefs contribute to the sequence of events?
3. What might be done differently in future?

An analysis of the events revealed a series of related factors that contributed to Asma's adverse outcome. For example, her poor understanding of the purpose of attending screening visits resulted in reduced attendance at the prenatal checks, missing opportunities for the identification of potential risk factors for adverse birth consequences. The situation was exacerbated by poor English language proficiency meaning she did not feel confident in speaking with staff which further acted as a barrier to accessing maternity care. Moreover, health staff assumed Asma had an understanding of pregnancy and maternity services and also assumed she had an understanding of pregnancy-related health messages when she did not. Consequently, Asma relied on her mother-in-law's advice regarding her pregnancy, delaying her seeking help and accurate health messages. Furthermore, Asma later recognised that she put the needs of her family ahead of her own needs (as was considered culturally appropriate) which added a further delay to her seeking timely intervention. Asma concluded that in hindsight she did not know very much about pregnancy, or any associated risk factors (such as maternal weight, age, hypertension, intrauterine growth restriction, screening tests, late booking and inadequate prenatal attendance at clinics etc.). She and her family had 'normalised' pregnancy, and accepted the reality – they put their trust in fate. This example with Asma shows a multifaceted and complex series of events contributing to the adverse outcome, involving all levels of the SDOH.

<END NARRATIVE 22.2 HERE>

The SDOH framework and perinatal mortality

The SDOH framework is a good place to start when exploring public health problems such as perinatal mortality. It allows us to understand the wider determinants that mediate inequalities in perinatal mortality (and other public health issues) by taking a broad view of related contributory

factors. The SDOH for perinatal mortality will now be explored, using Dahlgren and Whitehead's model as a framework (see figure 1).

Heritable factors

Research has shown that there are several individual and heritable factors that adversely contribute to perinatal mortality. These include maternal age, either younger mothers (<20 years of age) or older mothers (>35 years of age) (Kahveci et al., 2018; Walker et al., 2016). In addition, certain ethnic groups appear more at risk in particular locations, such as Pakistani and Bangladeshi in England (Garcia et al., 2020b), non-Hispanic Black women in America (Centers for Disease Control, 2020) or Aboriginal and Torres Strait Islander women in Australia (Australian Institute of Health and Welfare, 2020). Similar patterns are observed across the globe, with disadvantaged communities having higher rates of perinatal mortality than the majority population.

Genetic factors also contribute to perinatal mortality. There are over one hundred and sixty-five identified factors found to contribute to congenital anomalies. These include genetic factors, neural tube defects, chromosomal abnormalities (e.g. Down's syndrome), autosomal recessive inheritance disorders (e.g. sickle cell and thalassaemia), metabolic disorders (e.g. diabetes) or exposure to teratogens² (Blackwell, 2015; World Health Organization, 2016). While statistics show the most common cause of perinatal mortality is immaturity related deaths, it is closely followed by congenital anomalies. Interestingly, there is a social gradient component in congenital anomalies in England, with a third more cases identified in women living in under-resourced socio-economic groups, suggesting that factors related to poverty contribute to genetic anomalies (World Health Organization, 2020). Furthermore, when reviewing termination of pregnancy statistics (post-antenatal screening), statistics from the UK show that 51% of pregnancy terminations were sought on maternal medical grounds while only 2% were reported to be because of physical disability or mental abnormality to the foetus (Department of Health, 2015).

² Pharmacological teratogens, e.g. thalidomide, sodium valproate, warfarin, chemical teratogens, e.g. alcohol and infectious teratogens, e.g. rubella, cytomegalovirus, coxsackie and staphylococcus aureus (Kurinczuk et al., 2010a).

Both globally and in England, Pakistani infants have a higher prevalence of congenital anomalies, perinatal mortality and burden of disease than infants from other ethnic groups (Kurinczuk et al., 2010; Office for National Statistics, 2014). The exact mechanism that helps to create the condition is unclear, but the commonly cited explanation is a result of consanguinity (World Health Organization, 2020). The identified risk factors that contribute to congenital anomalies include older maternal age, comorbid disease such as diabetes, obesity, and lower socio-economic position, suggesting complicated mechanisms contributing to genetic factors.

Lifestyle factors and health behaviour

The contributions of lifestyle factors and health behaviours to individual health outcomes are widely accepted, with growing bodies of research in specific areas (e.g. smoking and nutritional intake during pregnancy) further supporting the interactions among selected factors. Conner & Norman (2005; pg 2) define health behaviour as ‘activity undertaken for the purpose of preventing or detecting disease or for improved health and wellbeing.’ The definition includes accessing health information or remedies from various sources, such as spiritual, icons, cultural beliefs, herbs and modern medicine (Tarafder et al., 2013). Cultural practice, customs, past behaviours, peer interactions and levels of health literacy have been shown to contribute to health beliefs and health behaviours (Conner & Norman, 2015). These sources of influence on health behaviours are fluid and are dependent on the cultural and situational contexts of the people involved. Health behaviours within the perinatal mortality literature are constrained to behaviours that are mostly considered modifiable. Typically, these are tobacco consumption, alcohol and substance misuse, nutritional intake, monitoring of foetal movements, the clinic bookings and keeping of appointments, parity, body mass index, gestational diabetes, hypertension and consanguinity (Conner & Norman, 2015).

Social and community networks

This section considers the contributions of social factors and community networks to perinatal mortality. There is an established body of evidence-based research supporting the contribution of

social support in health outcomes. For instance, a buffering effect has been shown when migrant individuals and families live in areas with other people from the same ethnic group (Bécares et al., 2012; Halpern & Nazroo, 1999). Furthermore, social support is not static, it changes across the life course. Among families that are separated through migration, or natural disasters, social support may be fractured, or non-existent.

Social support can include practical, emotional and informational resources, and is exchanged among family, friends, community networks, and public services. It also includes religious networks (Reid & Herbert, 2014). Family and friends are considered a resource for expectant women and may influence birth outcomes by the extent of their social support, information sharing and social inclusion provided (which may be perceived as positive, or negative) (Cross-Sudworth et al., 2015). Researchers have considered the impact of social support after a stillbirth; however, there is a paucity of studies exploring the contribution of social support on the outcome of perinatal mortality (Redshaw et al., 2014). Moreover, research on kinship ties in South Asian families resulted in the stereotyped assumptions of social support being available, contributing to less professional support being offered (Katbamna et al., 2004). Consequently, when health professionals and policymakers (erroneously) determine that social support is available, it negates the responsibility of formalised support services and the development of policies that address the problems. The contribution of social support in birth outcomes is complicated but an important consideration to SDOH.

Living conditions

When considering societal and government policy level implications on SDOH in perinatal mortality, it is evident that changes at the government level can impact health outcomes. In more recent years, the UK government has paid increased attention to reducing perinatal mortality and addressing inequalities in health. The approach has included changes to legislation as evidenced in the Health and Social Care Act (2012) whereby the government pledged to address inequality in access, service provision and quality of care (Health and Social Care Act 2012). Furthermore, legal

objectives are evident in the ‘Mandate for the NHS’ to reduce deaths, stillbirth and neonatal death, which makes local NHS services legally accountable for their compliance to the outcomes framework (Department of Health, 2015). The mandate includes reducing inequalities and perinatal mortality. Therefore, tangible attempts to reduce inequality and address perinatal mortality is evidenced in the UK and filters to local initiatives such as the Infant Mortality National Support Team, and the Child Overview Death Panel. These agencies are charged with reviewing local cases of perinatal mortality, and responding with improved approaches to evidence-based care.

Environmental, cultural and socio-economic factors

We now turn our attention to the influence of determinants linked with socio-economic, cultural and environmental factors on perinatal mortality in the UK. Poverty and deprivation are often used interchangeably in the literature, but it is worth clarifying the distinction between the two concepts. Typically, poverty is associated with financial resources (i.e. used to purchase supplies such as food) and considered one-dimensional, whereas deprivation refers to the difficulties that occur due to the lack of resource(s); thus, it is conceptualised as multi-dimensional (Unwin, 2014). For instance, having access to adequate financial resources enables healthy food choices needed for positive and protective health outcomes. The relationships concerning poverty, deprivation, and adverse birth outcomes are well documented with a clear social gradient observed between/among and within countries (Zeitlin et al., 2016). Statistical data demonstrate that women living in the most deprived areas (in the UK and USA) have worse birth outcomes (Dibben et al., 2006; Driscoll & Ely, 2019). These patterns of the most deprived areas having worse birth outcomes are observed across the globe and have existed over decades.

Early life experiences of growing up in poverty have been shown to mediate health outcomes, although the mechanism behind this relationship is complicated. Current thinking suggests three explanations: firstly, the direct consequence of poverty, such as poor living standards or reduced material resources; secondly, individual health behaviours as a result of living in poverty (and includes greater perceived stress); and finally, less engagement with health services (Wickham et

al., 2016). These three explanations combined with health behaviours such as smoking, excess alcohol consumption, poor dietary intake, and inadequate exercise, exacerbate poor health outcomes (Benzeval et al., 2014). However, a paucity of individual resources alone is not a robust explanation for perinatal mortality. The global social gradient easily explains impoverished families, but this does not explain why Pakistani or Bangladeshi women have worse birth outcomes in England.

Culture mediates how people interpret their social world; a collection of social norms and expectancies envelop the experience of pregnancy. For example, in Pakistani and Bangladeshi families, pregnancy is anticipated following marriage (Koenig & Al Shohaib, 2014) and elevates their 'social status' within their community (Choudhury & Ahmed, 2011). Commonly, in Pakistani and Bangladeshi families, women hold the role of 'homemaker' with the social norm of attending to household matters and family caring responsibilities (Jomeen & Redshaw, 2013; Puthussery et al., 2010). The position impacts the family financial resources, with small numbers of Pakistani and Bangladeshi women in formal employment positions, as shown in labour market figures (Office for National Statistics, 2020). As mentioned previously, cultural experience is also mediated by language.

This brief review of the SDOH on perinatal mortality in England shows a complex and interrelated picture of birth outcomes, revealing biopsychosocial factors at all levels of the SDOH, contributing to health outcomes. Naba, a Pakistani lady, helps to illuminate the interactions among these issues.

Case study

Naba: a mother at risk of perinatal mortality

Naba is a 28-year-old British second-generation Pakistani lady, who is 32 weeks pregnant with her third child. Her first pregnancy resulted in a stillbirth delivered at 34 weeks; the cause was unknown. She is a non-smoker, does not take regular exercise and is overweight with a Body Mass Index

(BMI) (using World Health Organization [WHO] revised Asian metrics) of 28 kg/m² indicating 'high risk' (Barba et al., 2004; R. Garcia et al., 2017).

Naba lives with her husband, who is self-employed as a taxi driver, and her 20-month-old daughter, Rukia. She also lives with her mother-in-law who has renal problems and her father-in-law who is a type 2 diabetic, in a culturally typical multigenerational family living setting. Naba is not employed and cares for her child and her ageing parents-in-law. Naba's husband earns a small amount over the threshold for the family which precludes them from receiving any financial aid from the government. Other relatives from her husband's family live close by, while Naba's parents and sisters reside 200 miles away in a different part of the country. Naba and her husband live in a mid-terraced home, with 3 bedrooms. They live in a disadvantaged part of town; densely populated and run-down, with other migrant settlers from Pakistan or Bangladesh. The area is affordable and offers social support by living close to other people who share their culture and values. However, crime rates are high and the majority of residents live below the minimum income level. Health outcomes are poor (Marmot, 2017b).

Naba has full access to maternity and medical services in primary and secondary care with the National Health Service (free at the point of delivery, see box 2) in Britain and her local hospital is 3 miles away, requiring a bus or taxi to get there.

Box 2: Understanding the British healthcare system

The government Department of Health has the responsibility for and oversees the National Health Service (NHS) which is publicly funded through taxation. The service is 'free at the point of delivery' for residents, entitled to the services. In 2018, the cost of healthcare in the UK was £214.4 billion (Office for National Statistics, 2018). The government uses an accountability framework, legislated by the National Health Service Act (2006), and documents such as The Long Term Plan, detailing the legal responsibility of service provision. The accountability is

mandated by the Secretary of State to local NHS Trusts to pursue defined goals such as improving outcomes for major diseases and long term conditions (Department of Health, 2015; 2016).

The NHS operates throughout the UK although it has been separated by nations (Wales, Northern Ireland, Scotland and England). This example will focus on services delivered through NHS England. Over the years, there have been changes to the structure of the NHS. Health services are offered through the Office for Health Improvement and Disparities (OHID) (formerly Public Health England) supporting public health and health protection and NHS England, which commissions primary and secondary care services. NHS services are delivered through primary (district general hospitals) secondary (community-based services including General Practitioners) and tertiary care (specialist services including neurosurgery or forensic mental health). At the time of writing, locally organised Clinical Commission Groups have the responsibility of assigning services as deemed necessary in the secondary care sector. These include elective care in a hospital setting, including rehabilitation, urgent or emergency care, community and mental health (including learning disability) health services and recovery services (for substance misuse).

A critique of the SDOH framework in understanding perinatal mortality

The SDOH framework is widely accepted and has utility in understanding morbidity and mortality; however, the exact mechanisms behind the inequalities remain unclear. Furthermore, there are limitations to the conceptual and applied functionality of the SDOH framework. Consequently, research has focused on measurable biological or behavioural determinants in perinatal mortality which are considered modifiable, such as smoking cessation or pre-pregnancy weight loss. Therefore, reviewing distal determinants that contribute to the outcome of biological or behavioural factors and the result of direct/indirect advantage/disadvantage is often ignored (Atkin, 2011). Figure 2 shows the relationship between proximal and distal determinants in adverse birth outcomes.

[insert figure 2 here]

The SDOH uses a systems framework that incorporates policy, environment, and community layers. While it acknowledges that interventions for reducing inequalities at one layer will influence another layer (Dahlgren & Whitehead, 1991; Navarro, 2009), the layers are conceptualised and operationalised as separate and are not understood to be intersected. A further criticism of the SDOH framework has been the lack of acknowledgement of power dynamics, such as political, discriminatory, or class-related, which can be identified at all levels in society but is not represented in the SDOH (Salway et al., 2010). Power dynamics may impact the context and empowerment of numerous factors at different layers (e.g. individual, community and environment). Here is an example: a local government prioritises public health agendas, mediating access and funding on specific health interventions (Patterson, 2014). Reducing perinatal mortality was not a priority in the UK until 2015, with the publication of the World Health Organization's sustainable development goals. However, a problem with politically driven priorities is that disadvantaged members of society are often further excluded and the inequality gap becomes wider (Marmot, 2017a). Moreover, the paucity of acknowledging power dynamics may well be the result of the SDOH framework being conceived in the West, with homogenous assumptions made on human experience, therefore obscuring the contributions of ethnicity and culture. Inequalities in health are the result of inequitable life circumstances that are then perpetuated by power dynamics, finance, and resources that money can purchase (e.g. education and health care) that then continues to intentionally or unintentionally discriminate and perpetuate an inequitable sharing of resources (Marmot, 2015).

The SDOH positions ethnicity in the heritable factors section. However, as mentioned previously ethnicity is a multifaceted construct and is not grounded in genetics (i.e. biologically) as is the conceptual issue of discussing 'race.' Ethnicity interacts with all levels of the SDOH; for example, Pakistani and Bangladeshi families tend to reside in areas of high deprivation, with poor quality

housing and increased exposure to environmental risks, with resulting increased risks of adverse birth outcomes (Sharp, 2010). Moreover, culture is positioned in the farthest layer from the individual; however, culture being a dynamic concept is also present in every level of the SDOH framework – seen in policy, environment, community and individual levels and incorporates shared values influencing beliefs and behaviour (Patterson, 2014).

Many of the SDOH factors at each layer are context-dependent and are not made explicit. Moreover, discrimination and disadvantage may be experienced across all levels of the framework whereby quality of life will be affected; however, this is not accounted for in the SDOH framework (Brunner & Marmot, 2006). Furthermore, while psychosocial and psychobiological factors are recognised to mediate health, the current literature does not examine how hypothalamic–pituitary–adrenal (HPA) axis (i.e. immune or endocrine dysfunction) may contribute to adverse pregnancy outcomes, or how resilience may provide protection (Saffron & Nazroo, 2002). For instance, data from the UK shows that South Asian women suffer from increased rates of gestational diabetes (Garcia et al., 2021), and 80% of maternal deaths due to SARS-CoV-2 were observed in Black Asian and Minority Ethnic women (Draper et al., 2021). The reasons are multifactorial and are subject to confirmation bias-focused research. For example, targeted interventions, such as gestational diabetes screening in South Asian pregnant women, result in the identification of higher numbers of cases that goes on to highlight ‘difference’ and suggests a propensity toward certain modifiable risk factors (e.g. high BMI and central obesity) in some populations (Anand et al., 2017).

Next steps with intersectional approaches

Intersectionality was first published in 1991 by US feminist writer Kimberlé Crenshaw, who demonstrated that by examining the intersection of (female) gender and race, a different socially constructed view showed oppression, power imbalance, and discrimination. Her work demonstrated that the experience of domestic violence was different for Black women than White women: whereby White women only experienced sexism, whereas Black women experienced sexism *and* racism (Crenshaw, 1991).

The SDOH framework has been useful to consider some of the determinants of perinatal mortality but there are both functional and conceptual limitations with this approach. As a result, research has focused on proximal determinants, such as biological factors or lifestyle behaviours. However, the distal determinants and the consequence of disadvantage have been neglected (Garcia, 2017). More needs to be done to recognise and understand the causes of the causes (Marmot and Wilkinson, 2003). Arguably, utilising an intersectional approach reveals previously obscured factors that may contribute to the experience of perinatal mortality and recognises this is mediated by intersecting factors such as power dynamics, socio-economic status, education status and ethnicity (Viruell-Fuentes et al., 2012).

Much of the current research with Pakistani and Bangladeshi mothers in the maternity literature emphasises differences focussed on maternal ethnicity; however, this ignores power dynamics and social relationships, perpetuating 'othering' and contributes further to a lack of objective criticism (Garcia, 2017). Furthermore, while epidemiological research highlights risk factors, researchers used pre-defined categories which are conceptualised as being additive. This then fails to reveal risks that may be more important to the outcome, or conceptualised as multiplicative, and may hide other contributory factors that might not be evident.

By conceptualising risk using SDOH, the researcher obscures power dynamics that operate at individual, social or environmental levels and this hides similarities or differences operating between and within disadvantaged groups, failing to uncover the key determinants for perinatal mortality (Garcia, 2017). For instance, power imbalance observed in maternity care, *with* power imbalance observed as an ethnic minority, *with* power imbalance being perceived as uneducated, and so forth. The combined and multiplicative risk effects following the power imbalance experienced by a migrant pregnant mother can then be seen to be substantial. Research now needs to elucidate further to determine how this mechanism works.

Most health research and policies fail to recognise the intersection of various social identities and are unaware of how this conjuncture of multiple determinants at the individual level interacts with structural level health disparities (Bowleg, 2012). For example, how the combination of ethnicity, deprivation, low education attainment, employment options, and poor health literacy interacts with rigid maternity services aimed at homogenous middle-class White women, further excluding already marginalised women is missing from the science (Garcia, 2017). Therefore, intersectionality addresses power dynamics such as privilege and oppression. It considers how these powerful forces interact with structural level services in maintaining inequality. Moreover, using intersectionality to understand health inequalities moves away from victim-blaming – as is often seen in studies that involve ethnicity or culture – and encourages researchers to reconceptualise existing issues and utilise a broader praxis as is required in health research, therefore being more empowering (López & Gadsden, 2016).

Conclusion

The SDOH is a useful way to understand the wider biopsychosocial factors that contribute to health inequalities and health outcomes. It highlights the distal determinants that mediate health in a variety of contexts and considers the wider social environment in which individuals are situated. Perinatal mortality is an example that shows a clear social gradient, as evidenced in Pakistani and Bangladeshi infants in the UK. However, using ethnicity as a variable in research is not without its conceptual and operational challenges, including considerations of how culture, language and religion contribute to shaping an individual's subjective experience and engagement in health behaviours. While the SDOH framework has been useful, it is not without its limitations. The intersectional approach offers a more complex conceptual analysis of the wider determinants that mediate health outcomes.

Discussion questions

1. Using the social determinants of health framework, what specific risk factors does Naba have for an adverse birth outcome?
2. Identify where inequality may contribute to an adverse birth outcome for Naba.
3. How could a culturally-specific plan of care address the major health-related issues that might then improve Naba's overall health and help to assure that her future childbearing experiences might have a more favourable outcome?
4. Apply the concept of intersectionality to Naba's lived experiences in the UK. What recommendations could an informed health professional make for policy and practice changes?

References

- Abortion Act, (1967). <https://www.legislation.gov.uk/ukpga/1967/87?view=extent>
- Ali, N. (2003). Fluency in the consulting room. *British Journal of General Practice*, July, 514–518. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1314639/pdf/14694661.pdf>
- Anand, S. S., Gupta, M., Teo, K. K., Schulze, K. M., Desai, D., Abdalla, N., Zulyniak, M., de Souza, R., Wahi, G., Shaikh, M., Beyene, J., de Villa, E., Morrison, K., McDonald, S. D., & Gerstein, H. (2017). Causes and consequences of gestational diabetes in South Asians living in Canada: results from a prospective cohort study. *CMAJ Open*, 5(3), E604–E611. <https://doi.org/10.9778/cmajo.20170027>
- Antonisamy, B., Vasan, S. K., Geethanjali, F. S., Gowri, M., Hepsy, Y. S., Richard, J., Raghupathy, P., Karpe, F., Osmond, C., & Fall, C. H. D. (2017). Weight Gain and Height Growth during Infancy, Childhood, and Adolescence as Predictors of Adult Cardiovascular Risk. *Journal of Pediatrics*, 180, 53–61.e3. <https://doi.org/10.1016/j.jpeds.2016.09.059>
- Arzuaga, B. H., & Lee, B. H. (2011). Limits of human viability in the United States: A medicolegal review. *Paediatrics*, 128(6), 1047–1052. <https://doi.org/10.1542/peds.2011-1689>
- Atkin, K. (2011). Negotiating ethnic identities and health. In H. Graham (Ed.),**

- Understanding health inequalities* (2nd Edn, pp. 125–141). Open University Press.**
- Australian Institute of Health and Welfare. (2020). *Stillbirths and neonatal deaths in Australia, Maternal characteristics*. <https://www.aihw.gov.au/reports/mothers-babies/stillbirths-and-neonatal-deaths-in-australia/contents/overview-of-perinatal-deaths/maternal-characteristics>
- Barba, C., Cavalli-Sforza, T., Cutter, J., Darnton-Hill, I., Deurenberg, P., Deurenberg-Yap, M., & Gill, T. (2004). Appropriate body-mass index for Asian populations and its implications for policy and intervention strategies. *Lancet*. [https://doi.org/10.1016/S0140-6736\(03\)15268-3](https://doi.org/10.1016/S0140-6736(03)15268-3)
- Bartley, M. (2008). *Health inequality: an introduction to theories, concepts and methods*. Blackwell Publishers.
- Bécares, L., Shaw, R., Nazroo, J., Stafford, M., Albor, C., Atkin, K., Kiernan, K., Wilkinson, R., & Pickett, K. (2012). Ethnic density effects on physical morbidity, mortality, and health behaviours: A systematic review of the literature. *American Journal of Public Health, 102*(12). <https://doi.org/10.2105/AJPH.2012.300832>
- Benzeval, M., Bond, L., Campbell, M., Egan, M., Lorenc, T., Petticrew, M., & Popham, F. (2014). *How does money influence health?* Joseph Rowntree Foundation. (Issue March 2014). <http://www.jrf.org.uk/sites/files/jrf/income-health-poverty-full.pdf>
- Best, M., Leget, C., Goodhead, A., & Paal, P. (2020). An EAPC white paper on multi-disciplinary education for spiritual care in palliative care. *BMC Palliative Care, 19*(1), 1–10. <https://doi.org/10.1186/s12904-019-0508-4>
- Bhopal, R. (2007). *Ethnicity, race and health in multicultural societies: Foundations for better epidemiology, public health and health care*. Oxford University Press.
- Bidwell, D. R., Bava, S., Gergen, K., & Hosking, D. (2016). *Spirituality, Social Construction, Relational Processes* (D. Bidwell (Ed.); Issue November). Worldshare books.
- Blackwell, C. (2015). The Role of Infection and Inflammation in Stillbirths: Parallels with SIDS? *Frontiers in Immunology, 6*(June), 1–8. <https://doi.org/10.3389/fimmu.2015.00248>
- Blane, D. (2006). The life course, the social gradient and health. In M. Marmot & R. Wilkinson (Eds.), *Social Determinants of Health* (2nd Edn, pp. 54–78). Oxford University Press.

- Blane, D., Smith, G. D., & Hart, C. (1999). Some social and physical correlates of intergenerational social mobility: Evidence from the west of Scotland collaborative study. *Sociology*, 33(1), 169–183. <https://doi.org/10.1177/S0038038599000097>
- Bowleg, L. (2012). The problem with the phrase women and minorities: Intersectionality—an important theoretical framework for public health. *American Journal of Public Health*, 102(7), 1267–1273. <https://doi.org/10.2105/AJPH.2012.300750>
- Brunner, E., & Marmot, M. (2006). Social organisation, stress and health. In M. Marmot & R. G. Wilkinson (Eds.), *Social Determinants of Health* (2nd Edn, pp. 6–31). Oxford University Press.
- Cambridge dictionary. (2021). *SPIRITUALITY*. Cambridge Dictionary. <https://dictionary.cambridge.org/dictionary/english/spirituality>
- Centers for Disease Control. (2020). *Pregnancy Mortality Surveillance System*. <https://www.cdc.gov/reproductivehealth/maternal-mortality/pregnancy-mortality-surveillance-system.htm#trends>
- Centers for Disease Control and Prevention. (2018). *Infant Mortality*. <https://www.cdc.gov/reproductivehealth/maternalinfanthealth/infantmortality.htm>
- Chattoo, S., & Atkin, K. (2019). ‘Race’, ethnicity and social policy: theoretical concepts and the limitations of current approaches to welfare. In G. Craig, K. Atkin, S. Chattoo, & F. R. (Eds.), *Understanding “race” and ethnicity. Theory, policy and practice*. (2nd Edn, pp. 19–41). Policy Press.
- Chaturvedi, N. (2001) ‘Ethnicity as an epidemiological determinant--crudely racist or crucially important?’, *International Journal of Epidemiology*, 30(5), pp. 925–927. doi: 10.1093/ije/30.5.925.
- Choudhury, N., & Ahmed, S. M. (2011). Maternal care practices among the ultra poor households in rural Bangladesh: a qualitative exploratory study. *BMC Pregnancy and Childbirth*, 11(1), 15. <https://doi.org/10.1186/1471-2393-11-15>
- Cohen, D. (2020). Methods in cultural psychology. In S. Kitayama & D. Cohen (Eds.), *Handbook of Cultural Psychology* (2nd Edn, pp. 196–237). The Guildford Press.

- Cohen, S., Janicki-Deverts, D., Chen, E., & Matthews, K. (2010). Childhood socioeconomic status and adult health. *Annals of the New York Academy of Sciences*, *1186*, 37–55.
<https://doi.org/10.1111/j.1749-6632.2009.05334.x>
- Collins, J. W., Rankin, K. M., & David, R. J. (2011). Low birth weight across generations: the effect of the economic environment. *Maternal and Child Health Journal*, *15*(4), 438–445.
<https://doi.org/10.1007/s10995-010-0603-x>
- Conner, Mark., & Norman, P. (2005). Predicting Health Behaviour: A Social Cognition Approach. In M. Conner & P. Norman (Eds.), *Predicting health behaviour*. (2nd Edn, pp. 1–373). Open University Press.
- Conner, M., & Norman, P. (2015). *Predicting and Changing Health Behaviour: Research and Practice with Social Cognition Models* (M. Conner & P. Norman (Eds.); 3rd Edn). McGraw Hill. <https://www.mheducation.co.uk/predicting-and-changing-health-behaviour-research-and-practice-with-social-cognition-models-9780335263783-emea-group>
- Crenshaw, K. (1991). Mapping the margins: Intersectionality, identity politics, and violence against women of color. *Stanford Law Review*, *43*(6), 1241–1299.
<https://doi.org/10.2307/1229039>
- Cross-Sudworth, F., Williams, M., & Gardosi, J. (2015). Perinatal deaths of migrant mothers: Adverse outcomes from unrecognised risks and substandard care factors. *British Journal of Midwifery*, *23*(10), 734–740. <https://doi.org/10.12968/bjom.2015.23.10.734>
- Dahlgren, G., & Whitehead, M. (1991). Policies and strategies to promote social equity in health Background document to WHO – Strategy paper. In *Institutet för Framtidsstudier* (Issue September). http://s2.medicina.uady.mx/observatorio/docs/eq/li/eq_2007_Li_Dahlgren.pdf
- De Bernis, L., Kinney, M. V., Stones, W., Ten Hoope-Bender, P., Vivio, D., Leisher, S. H., Bhutta, Z. A., G. Imezoglu, M., Mathai, M., Beliz J. M., Franco, L., McDougall, L., Zeitlin, J., Malata, A., Dickson, K. E., & Lawn, J. E. (2016). Stillbirths: ending preventable deaths by 2030. *The Lancet*, *387*(10019). [https://doi.org/10.1016/S0140-6736\(15\)00954-X](https://doi.org/10.1016/S0140-6736(15)00954-X)
- Department of Health. (2015). *The Mandate 2015–2016. April 2015–March 2016*.
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/486818/mnda

te-NHSE-15_16.pdf

Department of Health (2016) The Government's mandate to NHS England for 2016-17. Available at: <http://www.parliament.uk/written-questions-answers-statements/written-statement/Commons/2015-12-17/HCWS440>.

Dex, S., & Joshi, H. (Eds.). (2005). *Children of the 21st Century*. The Policy Press.

Dibben, C., Sigala, M., & Macfarlane, A. (2006). Area deprivation, individual factors and low birth weight in England: is there evidence of an “area effect”? *J Epidemiol Community Health, 60*, 1053–1059. <https://doi.org/10.1136/jech.2005.042853>

Draper, E. S., Gallimore, I. D., Kurinczuk, J. J., & Kenyon, S. (2021). *Maternal, Newborn and Infant Clinical Outcome Review Programme MBRRACE-UK Perinatal Confidential Enquiry Stillbirths and neonatal deaths in twin pregnancies* (Issue January). www.hqip.org.uk/national-programmes.

Driscoll, A. K., & Ely, D. M. (2019). *National Vital Statistics Reports Volume 68, Number 11 September 25, 2019*. <https://www.cdc.gov/nchs/products/index.htm>.

Engel, G. L. (1977, 2012). The Need for a New Medical Model: A Challenge for Biomedicine. *Psychodynamic Psychiatry, 40*(3), 377–396. Retrieved November 5, 2020, from <https://www.urmc.rochester.edu/MediaLibraries/URMCMedia/medical-humanities/documents/Engle-Challenge-to-Biomedicine-Biopsychosocial-Model.pdf>

Flannelly, K. J., Jankowski, K. R. B., & Flannelly, L. T. (2014). Operational definitions in research on religion and health. *Journal of Health Care Chaplaincy, 20*(2), 83–91. <https://doi.org/10.1080/08854726.2014.909278>

Garcia, R., Ali, N., Griffiths, M., & Randhawa, G. (2020a). A qualitative study exploring the experiences of bereavement after stillbirth in Pakistani, Bangladeshi and white British mothers living in Luton, UK. *Midwifery, 91*, 102833. <https://doi.org/10.1016/j.midw.2020.102833>

Garcia, R., Ali, N., Guppy, A., Griffiths, M., & Randhawa, G. (2017). A comparison of antenatal classifications of “overweight” and “obesity” prevalence between white British, Indian, Pakistani and Bangladeshi pregnant women in England; Analysis of retrospective data. *BMC*

- Public Health*, 17(1), 308. <https://doi.org/10.1186/s12889-017-4211-1>
- Garcia, R., Ali, N., Guppy, A., Griffiths, M., & Randhawa, G. (2020b). Ethnic differences in risk factors for adverse birth outcomes between Pakistani, Bangladeshi, and White British mothers. *Journal of Advanced Nursing*, 76(1), 174–182. <https://doi.org/10.1111/jan.14209>
- Garcia, R., Ali, N., Guppy, A., Griffiths, M., & Randhawa, G. (2021). Analysis of routinely collected data: Determining associations of maternal risk factors and infant outcomes with gestational diabetes, in Pakistani, Indian, Bangladeshi and white British pregnant women in Luton, England. *Midwifery*, 94, 102899. <https://doi.org/10.1016/j.midw.2020.102899>
- Garcia, R. L. (2017). *Perinatal mortality in Pakistani, Bangladeshi and White British mothers, in Luton*. [University of Bedfordshire].**
- <http://uobrep.openrepository.com/uobrep/handle/10547/622733>
- Gonzalez, R. M., & Gilleskie, D. (2017). Infant Mortality Rate as a Measure of a Country's Health: A Robust Method to Improve Reliability and Comparability. *Demography*, 54(2), 701–720. <https://doi.org/10.1007/s13524-017-0553-7>
- Gregory, E. C. W., Drake, P., & Martin, J. A. (2018). Lack of Change in Perinatal Mortality in the United States, 2014–2016. *NCHS Data Brief*, 316, 1–8.
- Gustafsson, P. E., Miguel, S. S., Janlert, U., Theorell, T., Westerlund, H., & Hammarström, A. (2014). Life-course accumulation of neighbourhood disadvantage and allostatic load: Empirical integration of three social determinants of health frameworks. *American Journal of Public Health*, 104(5), 904–910. <https://doi.org/10.2105/AJPH.2013.301707>
- Halpern, D., & Nazroo, J. (1999). The ethnic density effect: results from a national community survey of England and Wales. *International Journal of Social Psychiatry*, 46(1), 34–46. <https://doi.org/10.1177/002076400004600105>
- Health and Social Care Act 2012, (2012).
- <http://www.legislation.gov.uk/ukpga/2012/7/contents/enacted>
- Hostinar, C. E., Ross, K. M., Chen, E., & Miller, G. E. (2017). Early-life socioeconomic disadvantage and metabolic health disparities. *Psychosomatic Medicine*, 79(5), 514–523. <https://doi.org/10.1097/PSY.0000000000000455>

- Hsu, C.-N., & Tain, Y.-L. (2019). The Good, the Bad, and the Ugly of Pregnancy Nutrients and Developmental Programming of Adult Disease. *Nutrients*, *11*(894), 1–21.
<https://doi.org/10.3390/nu11040894>
- Humes, K. R., Jones, N. A., & Ramirez, R. R. (2011). Overview of race and Hispanic origin: 2010. In *United States Census Bureau* (Issue March).
<http://www.census.gov/population/race/>
- Jomeen, J., & Redshaw, M. (2013). Ethnic minority women’s experience of maternity services in England. *Ethnicity & Health*, *18*(3), 280–296
<https://doi.org/10.1080/13557858.2012.730608>
- Jones, K. F. (2018). Spirituality: More than just religion. *Journal of the Australasian Rehabilitation Nurses Association*, *21*(1), 12–14.
<https://search.informit.org/doi/10.3316/INFORMIT.978149216740268>
- Jornayvaz, F. R., Vollenweider, P., Bochud, M., Mooser, V., Waeber, G., & Marques-Vidal, P. (2016). Low birth weight leads to obesity, diabetes and increased leptin levels in adults: The CoLaus study. *Cardiovascular Diabetology*, *15*(1), 1–10. <https://doi.org/10.1186/s12933-016-0389-2>
- Kahveci, B., Melekoglu, R., Evruke, I. C., & Cetin, C. (2018). The effect of advanced maternal age on perinatal outcomes in nulliparous singleton pregnancies. *BMC Pregnancy and Childbirth*, *18*(1), 1–7. <https://doi.org/10.1186/s12884-018-1984-x>
- Karlsen, S., & Nazroo, J. (2011). Religion, ethnicity and health inequalities. In H. Graham (Ed.), *Understanding health inequalities* (2nd Edn, pp. 103–125). Open University Press.
- Katbamna, S., Ahmad, W., Bhakta, P., Baker, R., & Parker, G. (2004). Do they look after their own? Informal support for South Asian carers. *Health and Social Care in the Community*, *12*(5), 398–406.
- Koenig, H. G., McCullough, M. E., & Larson, D. B. (2001). *Handbook of Religion and Health* (Harold G. Koenig (Ed.)). Oxford University Press.
- Koenig, M., & Al Shohaib, S. (2014). *Health and wellbeing in Islamic societies. background, research and Applications*. Springer New York.

- Kurinczuk, J. J., Hollowell, J., Boyd, P. A., Oakley, L., Brocklehurst, P., & Gray, R. (2010). *The contribution of congenital anomalies to infant mortality*. National Perinatal Epidemiology Unit. Oxford.
- Llamas, A., Borkowski, L., & Wood, S. (2018). *Public health impacts of state-level abortion restrictions* (Issue April).
https://publichealth.gwu.edu/sites/default/files/downloads/projects/JIWH/Impacts_of_State_Abortion_Restrictions.pdf
- López, N., & Gadsden, V. L. (2016). Health Inequities, Social Determinants, and Intersectionality. *National Academy of Medicine, Perspective*, 1–15. <https://nam.edu/wp-content/uploads/2016/12/Health-Inequities-Social-Determinants-and-Intersectionality.pdf>
- Lu, M. C., & Halfon, N. (2003). Racial and ethnic disparities in birth outcomes: a life-course perspective. *Maternal and Child Health Journal*, 7(1), 13–30.
<https://doi.org/10.1023/A:1022537516969>
- Marie, G., Higginbottom, A., Evans, C., Morgan, M., Bharj, K. K., Eldridge, J., & Hussain, B. (2019). Experience of and access to maternity care in the UK by immigrant women: a narrative synthesis systematic review. *BMJ Open*, 9, 29478.
<https://doi.org/10.1136/bmjopen-2019-029478>
- Markus, H. R., & Hamedani, M. Y. (2010). Sociocultural Psychology: The dynamic interdependence among self systems and social systems. In S. Kitayama & D. Cohen (Eds.), *Handbook of Cultural Psychology* (pp. 3–40). The Guildford Press.
- Marmot, M., Allen, J., Goldblatt, P., Boyce, T., McNeish, D., Grady, M., & Geddes, I. (2010). *Fair Society, Healthy Lives*. <https://doi.org/10.1016/j.puhe.2012.05.014>
- Marmot, M., & Wilkinson, R. (2003). Determinants of Health. The Solid Facts. In R. Wilkinson & M. Marmot (Eds.), *World Health Organization* (2nd Edn, Vol. 2, Issue 2). World Health Organization. <https://doi.org/10.1016/j.jana.2012.03.001>
- Marmot, Michael. (2015). The health gap: The challenge of an unequal world. *The Lancet*, 386(10011), 2442–2444. [https://doi.org/10.1016/S0140-6736\(15\)00150-6](https://doi.org/10.1016/S0140-6736(15)00150-6)
- Marmot, Michael. (2017a). Social justice, epidemiology and health inequalities. *European***

Journal of Epidemiology, 32(7), 537–546. <https://doi.org/10.1007/s10654-017-0286-3>

Marmot, Michael. (2017b). Closing the health gap. *Scandinavian Journal of Public Health*, 45(7), 723–731. <https://doi.org/10.1177/1403494817717433>

Marmot, Michael, Allen, J., Boyce, T., Goldblatt, P., Morrison, J., Michael Marmot, B., of Jessica Allen, C., Allen, M., Ntouva, A., Porritt Peter Goldblatt, F., Beswick, L., Bourke, D., Codling, K., Hallam, P., Munro, A., Dixon, J., Bibby, J., Cockin, J., Elwell Sutton, T., ... Wiseman, A. (2020). *Health Equity in England: The Marmot review 10 years on*. (Vol. 10). <http://www.instituteofhealthequity.org/resources-reports/marmot-review-10-years-on/the-marmot-review-10-years-on-full-report.pdf>

Marsella, A. J., & Yamada, A. (2010). Culture and psychopathology: Foundations, issues and directions. In S. Kitayama & D. Cohen (Eds.), *Handbook of Cultural Psychology* (pp. 797–821). The Guildford Press.

Memon, K. N., & Rahman, A. A. (2020). Consanguinity : A risk factor for adverse birth outcomes. *International Journal of Current Research*, 8(11), 41132–41137.

Nandi, A., & Platt, L. (2013). *Britishness and Identity Assimilation among the UK's Minority and Majority ethnic groups*. December 2013.

Navarro, V. (2009). What we mean by social determinants of health. *International Journal of Health Services*, 39(3), 423–441. <https://doi.org/10.2190/HS.39.3.a>

Office for National Statistics. (2012). *Ethnicity and National Identity in England and Wales (2011)* (Issue December). http://www.ons.gov.uk/ons/dcp171776_290558.pdf

Office for National Statistics. (2014). *Childhood, Infant and Perinatal Mortality in England and Wales, 2012*. http://www.ons.gov.uk/ons/dcp171778_350853.pdf

Office for National Statistics. (2018). *Child mortality (death cohort) tables in England and Wales - Office for National Statistics*. Child Mortality Data.

<https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/datasets/childmortalitystatisticschildhoodinfantandperinatalchildhoodinfantandperinatalmortalityinenglandandwales>

Office for National Statistics. (2020). *Labour market status by ethnic group A09*.

<https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/datasets/labourmarketstatusbyethnicgroupa09>

- Patterson, O. (2014). Making Sense of Culture. *Annual Review of Sociology*, 40(1), 1–30.
<https://doi.org/10.1146/annurev-soc-071913-043123>
- Phillimore, J. (2016). Migrant maternity in an era of superdiversity: New migrants’ access to, and experience of, antenatal care in the West Midlands, UK. *Social Science and Medicine*, 148, 152–159. <https://doi.org/10.1016/j.socscimed.2015.11.030>
- Puthussery, S., Twamley, K., Macfarlane, A., Harding, S., & Baron, M. (2010). “You need that loving tender care”: maternity care experiences and expectations of ethnic minority women born in the United Kingdom. *Journal of Health Services Research & Policy*, 15(3), 156–162. <https://doi.org/10.1258/jhsrp.2009.009067>
- Raju, T. N. K., Mercer, B. M., Burchfield, D. J., & Joseph, G. F. (2014). Periviable birth: Executive summary of a joint workshop by the Eunice Kennedy Shriver National Institute of Child Health and Human Development, Society for Maternal-Fetal Medicine, American Academy of Pediatrics, and American College of Obstetricians and Gynecologists. In *Obstetrics and Gynecology* (Vol. 123, Issue 5, pp. 1083–1096). Lippincott Williams and Wilkins. <https://doi.org/10.1097/AOG.0000000000000243>
- Raman, S., Nicholls, R., Ritchie, J., Razee, H., & Shafiee, S. (2016). How natural is the supernatural? Synthesis of the qualitative literature from low and middle-income countries on cultural practices and traditional beliefs influencing the perinatal period. *Midwifery*, 39, 87–97. <https://doi.org/10.1016/j.midw.2016.05.005>
- Redshaw, M., Rowe, R., & Henderson, J. (2014). *Listening to parents after stillbirth or the death of their baby after birth* (Issue May). <https://www.npeu.ox.ac.uk/listeningtoparents>
- Regmi, K., Naidoo, J., Pilkington, P., Researcher, P., Naidoo, J., & Pilkington, P. (2010). Understanding the Processes of Translation and Transliteration in Qualitative Research. *International Journal of Qualitative Methods*, 9(1), 16–26.
- Reid, C., & Herbert, C. (2014). ‘Welfare moms and welfare bums’: Revisiting poverty as a social determinant of health. *Health Sociology Review*, 14(2), 161–173.

<https://doi.org/10.5172/hesr.14.2.161>

- Rochow, N., Alsamnan, M., So, H. Y., Olbertz, D., Pelc, A., Däbritz, J., Hentschel, R., Wittwer-Backofen, U., & Voigt, M. (2019). Maternal body height is a stronger predictor of birth weight than ethnicity: Analysis of birth weight percentile charts. *Journal of Perinatal Medicine*, 47(1), 22–29. <https://doi.org/10.1515/jpm-2017-0349>
- Ross, L., McSherry, W., Giske, T., van Leeuwen, R., Schep-Akkerman, A., Koslander, T., Hall, J., Steinfeldt, V. Ø., & Jarvis, P. (2018). Nursing and midwifery students' perceptions of spirituality, spiritual care, and spiritual care competency: A prospective, longitudinal, correlational European study. *Nurse Education Today*, 67(May), 64–71. <https://doi.org/10.1016/j.nedt.2018.05.002>
- Saffron, K., & Nazroo, J. Y. (2002). *Agency and structure: the impact of ethnic identity and racism on the health of ethnic minority people*. 24(1), 1–20.
- Saigal, S., Stoskopf, B., Streiner, D., Paneth, N., Pinelli, J., & Boyle, M. (2006). Growth trajectories of extremely low birth weight infants from birth to young adulthood: A longitudinal, population-based study. *Pediatric Research*, 60(6), 751–758. <https://doi.org/10.1203/01.pdr.0000246201.93662.8e>
- Salway, S., Nazroo, J., Mir, G., Craig, G., Johnson, M., Gerrish, K., Sarah, S., James, N., Mir, G., Gary, C., Johnson, M., & Gerrish, K. (2010). Fair Society, Healthy Lives: A missed opportunity to address ethnic inequalities in health. Rapid response, April 12 2010. *British Medical Journal*, 340(April). <http://www.bmj.com/rapid-response/2011/11/02/fair-society-healthy-lives-missed-opportunity-address-ethnic-inequalities->
- Senior, P. A., & Bhopal, R. (1994). Ethnicity as a variable in epidemiological research. *BMJ (Clinical Research Ed.)*, 309(6950), 327–330. <https://doi.org/10.1136/bmj.309.6950.327>
- Sharp, K. (2010). Nursing and the sociology of healthcare. In E. Denny & S. Earle (Eds.), *Sociology for nurses* (2nd Edn, pp. 7–28). Policy Press.
- Shaw, A. (2012). “They say Islam has a solution for everything, so why are there no guidelines for this?” Ethical dilemmas associated with the births and deaths of infants with fatal abnormalities from a small sample of Pakistani Muslim couples in Britain. *Bioethics*, 26(9),

485–492. <https://doi.org/10.1111/j.1467-8519.2011.01883.x>

Skinner, B. F. (1988). *The Selection of Behavior: The Operant Behaviorism of B. F. Skinner ...* -

Burrhus Frederic Skinner - Google Books. Cambridge University Press.

[https://books.google.co.uk/books?hl=en&lr=&id=3nY7AAAAIAAJ&oi=fnd&pg=PR13&dq=Burrhus+Skinner+](https://books.google.co.uk/books?hl=en&lr=&id=3nY7AAAAIAAJ&oi=fnd&pg=PR13&dq=Burrhus+Skinner+&ots=7fQgZef-)

[J4&sig=KS35BK7x9pSyUPufsQufDpbuzns#v=onepage&q=Burrhus Skinner&f=false](https://books.google.co.uk/books?hl=en&lr=&id=3nY7AAAAIAAJ&oi=fnd&pg=PR13&dq=Burrhus+Skinner+&ots=7fQgZef-J4&sig=KS35BK7x9pSyUPufsQufDpbuzns#v=onepage&q=Burrhus+Skinner&f=false)

Tarafder, T., Sultan, P., & Rashid, T. (2013). Reproductive health beliefs and perceptions among slum women in Bangladesh. In P. Dalziel (Ed.), *37th Annual Conference of the Australian and New Zealand regional science association international* (Issue December, pp. 124–136). Lincoln University, New Zealand.

Tanyi, R. A. (2002). Towards clarification of the meaning of spirituality. *Journal of Advanced Nursing*, 39, 500–509

The World Health Organization. (2015). *Maternal and perinatal health*.

http://www.who.int/maternal_child_adolescent/epidemiology/profiles/neonatal_child/pak.pdf

The Kings Fund. (2020). What are health inequalities?

<https://www.kingsfund.org.uk/publications/what-are-health-inequalities>

Triandis, H. C. (2010). Culture and psychology: A history of the study of their relationship. In S. Kitayama & J. Cohen (Eds.), *Handbook of Cultural Psychology* (pp. 59–77). The Guildford Press.

United Nations Inter-agency Group for Child Mortality Estimation. (2020). *Stillbirth rate United Kingdom*. <https://childmortality.org/data/United Kingdom of Great Britain and Northern Ireland>

Unwin, J. (2014). *A UK without poverty*. Joseph Rowntree Foundation.

<https://www.jrf.org.uk/report/uk-without-poverty>

Viruell-Fuentes, E. A., Miranda, P. Y., & Abdulrahim, S. (2012). More than culture: Structural racism, intersectionality theory, and immigrant health. *Social Science and Medicine*, 75(12), 2099–2106. <https://doi.org/10.1016/j.socscimed.2011.12.037>

- Wadsworth, M. E., & Kuh, D. J. (1997). Childhood influences on adult health: a review of recent work from the British 1946 national birth cohort study, the MRC National Survey of Health and Development. *Paediatric and Perinatal Epidemiology*, *11*(1), 2–20.
<https://doi.org/10.1046/j.1365-3016.1997.d01-7.x>
- Walker, K. F., Bradshaw, L., Bugg, G. J., & Thornton, J. G. (2016). Causes of antepartum stillbirth in women of advanced maternal age. *European Journal of Obstetrics & Gynecology and Reproductive Biology*, *197*, 86–90.
<https://doi.org/10.1016/j.ejogrb.2015.11.032>
- Watson, J. (1997). *Behaviourism*. Routledge. <https://www-routledge-com.libezproxy.open.ac.uk/Behaviorism/Watson/p/book/9781560009948>
- Wehkalampi, K., Hovi, P., Dunkel, L., Strang-Karlsson, S., Järvenpää, A. L., Eriksson, J. G., Andersson, S., & Kajantie, E. (2011). Advanced pubertal growth spurt in subjects born preterm: The Helsinki study of very low birth weight adults. *Journal of Clinical Endocrinology and Metabolism*, *96*(2), 525–533. <https://doi.org/10.1210/jc.2010-1523>
- Wickham, S., Anwar, E., Barr, B., Law, C., & Taylor-Robinson, D. (2016). Poverty and child health in the UK: Using evidence for action. *Archives of Disease in Childhood*, *101*(8), 759–766. <https://doi.org/10.1136/archdischild-2014-306746>
- Wilkinson, R., & Marmot, M. (1998). *The Solid Facts* (R. Wilkinson, M. Marmot (Eds.)). WHO Regional Office for Europe.
- Winning, A., Glymour, M. M., McCormick, M. C., Gilsanz, P., & Kubzansky, L. D. (2016). Childhood Psychological Distress as a Mediator in the Relationship Between Early-Life Social Disadvantage and Adult Cardiometabolic Risk. *Psychosomatic Medicine*, *78*(9), 1019–1030. <https://doi.org/10.1097/PSY.0000000000000409>
- World Health Organization. (2016). *Congenital anomalies*. Fact Sheet 370.
<http://www.who.int/mediacentre/factsheets/fs370/en/>
- World Health Organization. (2020). *Congenital anomalies*. <https://www.who.int/news-room/factsheets/detail/congenital-anomalies>
- World Health Organization. (2021). *Maternal and perinatal health*. WHO; World Health

Organization. <https://www-who->

[int.libezproxy.open.ac.uk/maternal_child_adolescent/topics/maternal/maternal_perinatal/en/](https://www-who-int.libezproxy.open.ac.uk/maternal_child_adolescent/topics/maternal/maternal_perinatal/en/)

Yinger, J.M. (1970) *The Scientific Study of Religion*, London, Macmillan.

Zeitlin, J., Mortensen, L., Prunet, C., Macfarlane, A., Hindori-Mohangoo, A. D., Gissler, M.,

Szamotołska, K., van der Pal, K., Bolumar, F., Andersen, A-M. N., Olafsdottir, H. S.,

Zhang, W-H., Blondel, B., & Alexander, S. (2016). Socioeconomic inequalities in stillbirth

rates in Europe: measuring the gap using routine data from the Euro-Peristat Project. *Bmc*

Pregnancy and Childbirth, 16, 15–15. <https://doi.org/10.1186/s12884-016-0804-4>

Figure 1

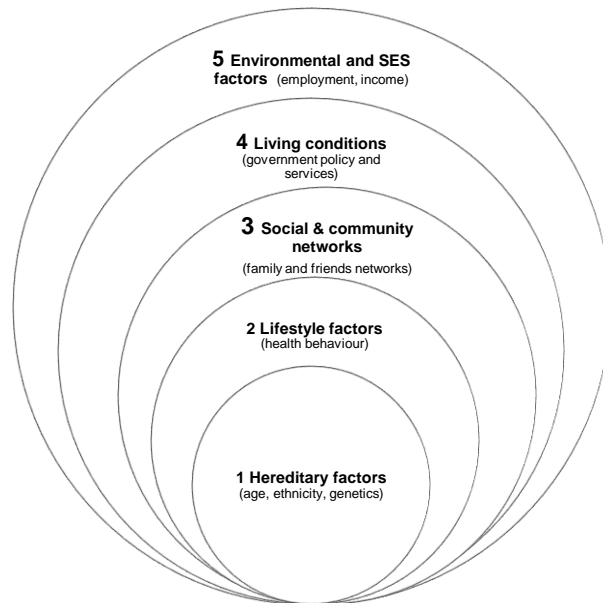


Figure 1 The social determinants of health framework – adapted from the Dahlgren-Whitehead rainbow model (1992)

[note to editors – author’s own created image]

Figure 2

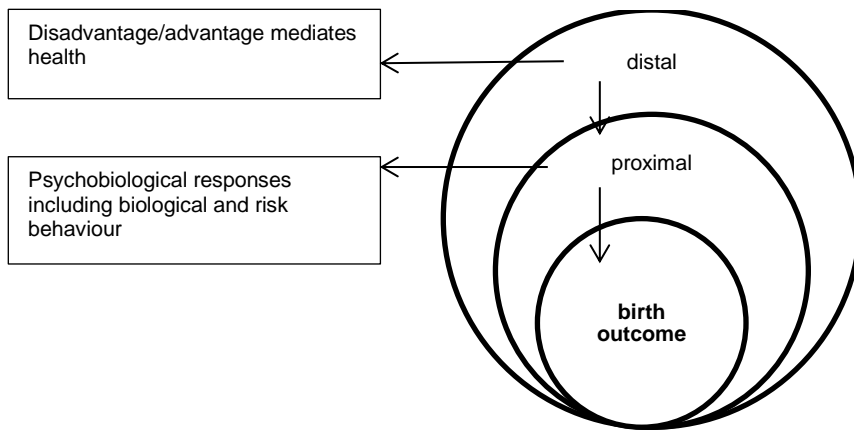


Figure 2: Diagram showing the relationships between distal and proximal determinants of birth outcomes

[note to editors – author’s own created image]