



A grounded theory of type 2 diabetes prevention and risk perception

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Objective. Type 2 diabetes (T2D) prevention programmes should target high-risk groups. Previous research has highlighted minimal engagement in such services from South Asian (SA) people. Given SA's elevated risk of T2D, there is a need to understand their perceptions, risks, and beliefs about T2D.

Design. This study aimed to assess T2D risk perception within a community sample of SA people using Grounded Theory methodology. Specifically, health beliefs were assessed, and we explored how these beliefs affected their T2D risk perceptions.

Method. Twenty SA participants (mean age = 38 years) without a diagnosis of T2D were recruited from community and religious settings across the North West of England. In line with grounded theory (Strauss & Corbin, 1990, Basics of qualitative research: Grounded theory procedures and techniques. Newbury Park: Sage Publications), data collection and analysis coincided.

Results. The superordinate category of Culturally Situated Risk Perception incorporated a complex psychological understanding of the formation of T2D risk perception, which takes into account the social, cultural, and community-based environmental factors. This superordinate category was explained via two core categories (1) Diminished Responsibility, informed by sub-categories of Destiny and Heredity, and (2) Influencing Healthy Lifestyle Behaviours, informed by sub-categories of Socio-cultural and Environmental.

Conclusion. This study investigated risk perception of T2D within the SA community. When considering health prevention in the context of an individual's culture, we need to consider the social context in which they live. Failure to acknowledge the cultural-situated T2D risk perception relevant to health promotion and illness messages may account for the issues identified with health care engagement in the SA population.

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Statement of contribution

What is already known on this subject?

- People who are of South Asian ethnicity are at higher risk of developing type 2 diabetes (T2D) compared to White Europeans.
- South Asian people are often considered hard to reach and engage less with health screening programmes.
- Risk perception research with South Asian people has focused on those already diagnosed with T2D and not the lay public.

What does this study adds?

- This is the first grounded theory study to understand T2D health-risk behaviour in South Asian people.
- The analysis presents Culturally Situated Risk highlighting the psychological formation of T2D Risk Perception.
- Social, cultural and psychological contexts should be embedded within T2D prevention strategies.

Background

In the United Kingdom (UK), 3.9 million people have a diagnosis of diabetes. In England, this equates to 8% of the adult population (NHS Digital, 2019), of which the majority (>90%) have type 2 diabetes (T2D) (Diabetes UK, 2020). However, an estimated 1,000,000 additional people are predicted to have diabetes but have not been diagnosed (Diabetes UK, 2020). Public Health England (PHE, 2018a) estimate there are 5 million people, in England alone, who are at high risk of developing T2D.

Health inequalities are unfair differences in health status which exist between groups of people or communities (Carey, Crammond, & De Leeuw, 2015; PHE, 2018b). A specific health inequality exists for people of South Asian (SA) descent, who are particularly vulnerable to T2D (Gujral, Pradeepa, Weber, Narayan, & Mohan, 2013; PHE, 2018b). Specifically, UK SA residents are more likely to develop T2D; to be diagnosed at younger ages; and to experience more T2D complications than the general UK population (PHE, 2018a; Wilmot & Idris, 2014). Epidemiology of T2D differs across SA sub-ethnicities (e.g., Indian, Pakistani, and Bangladeshi), although the prevalence in SA people is higher than is seen in White Europeans (Garduño-Díaz and Khokhar, 2012; Lucas, Murray, & Kinra, 2013). Despite the higher susceptibility for SA people, the NHS National Diabetes Audit (2020) suggests that SA people are not frequently identified through primary care (in the United Kingdom this is the first-line access to health provision). The most recent audit of all adults registered with T2D categorized patients' ethnicity as 66.5% white versus 21.6% minority ethnic origin (all classifications other than white) and 12% unknown. The SA population has increased in the United Kingdom over several decades and now represents a significant proportion of the UK population, which is expected to grow substantially (Rees, Wohland, & Norman, 2016; Rees, Wohland, Norman, Lomax, & Clark, 2017). Therefore, it is predicted that the prevalence of T2D in the United Kingdom will simultaneously increase (Gujral et al., 2013; Rowley, Bezold, Arikan, Bryne, & Krohe, 2017).

To address the rising prevalence of T2D, in 2015, 'The Healthier You: The NHS Diabetes Prevention Programme' (NDPP, NHS England 2016a, 2016b) was rolled out across England to reduce individuals T2D risk. The NDPP promotes weight loss and improvements in diet and physical activity, promoting self-regulation (Wu, Ding, Tanaka, & Zhang, 2014). However, despite the efforts to prevent diabetes in the general

population, prevention programmes have reported low levels of recruitment and retention (Douglas et al., 2011; Quay, Frimer, Janssen, & Lamers, 2017). Specifically, evidence (Knowles, Cotterill, Coupe, & Spence, 2019) has highlighted that the majority of referrals to programmes such as NDPP have come directly via primary care. Thus, the early rollout of NDPP may be targeting and recruiting the 'low-hanging fruit' (i.e., those already engaged in primary care), not necessarily the hard to reach and most at risk, such as those from SA ethnic minority populations. It is noteworthy that initial evidence of the NDPP rollout during 2016–2017 (Barron, Clark, Hewings, Smith, & Valabhji, 2018) claimed that 25% of individuals who attended NDPP assessment were from ethnic minority groups (defined as 'Asian, Afro-Caribbean, mixed, and other'). However, this statistic dropped to 19% during the 2017/2018 programme (Valabhji, 2018).

Further analysis of ethnicity, in terms subgroups (SA vs Black vs Afro-Caribbean, vs Mixed and Others), has not been explored, despite PHE acknowledging that SA people are one of the highest at-risk population groups (PHE, 2018a). It is unclear how successful the NDPP has been to date, engaging with and supporting ethnic minority, specifically SA, people to reduce their T2D risk. If programmes, such as NDPP, are to recruit and thus have an impact on those at the highest risk, it is important to consider peoples interactions and social constructs that inform their decision to engage with health care advice or to implement behaviour change practice to prevent the onset of a disease, such as T2D. There is limited previous research on this topic. However, Grace, Begum, Subhani, Kopelman, and Greenhalgh (2008) conducted a qualitative study with lay SA Bangladeshi people without a diagnosis of diabetes and included religious scholars and health professionals in the sample. The study was conducted within a deprived London borough of high ethnic diversity. Participants were presented with vignettes to aid discussions during focus groups, and data were analysed using thematic content analysis guided by the PEN-3 health promotion model (Airhihenbuwa, 1995). The findings suggested that Bangladeshi people had good knowledge of the causes of T2D, relative to dietary choices, obesity and engagement in physical activity and largely accepted that T2D was preventable. However, there was the recognition that T2D was widespread within the Bangladeshi community. Emadian, England, and Thompson (2017) conducted a mixed-method study to increase understanding of dietary intake amongst overweight and obese SA men. The qualitative data were analysed using content analysis. Overall, the study suggested that SA men had knowledge of T2D, with some referring to family members with the condition, but misconceptions in knowledge were also apparent. The participants all acknowledged that T2D could be preventable, although barriers for engaging in dietary changes or adhering to advice refer to lack of time, motivation, and cultural commitments. A qualitative review (Lucas et al., 2013) has explored UK SA peoples' perceptions around lifestyle disease (e.g., T2D and coronary heart disease, CHD) and health behaviours (diet, physical activity). Ten studies, of mixed quality, were included in this review, and the study participants may have been diagnosed with a condition, such as diabetes or CHD, or not. The sample of SA people included a broad mix of females and males, and those from Bangladeshi, Pakistani, Indian, South Asian non-specified, and white participants.

In contrast to Grace et al. (2008) and Emadian et al. (2017), this review reported that SA people lacked an understanding of the relationship between lifestyle and disease. Also, the risk associated with disease onset was often attributed to external influences as opposed to an individual's control. The notion of social norms and cultural influences were a key focus in the discussion, and while there is an acknowledgement that SA people may have knowledge of conditions or indeed may have received lifestyle

advice, this information does not appear to have been prioritized and actioned into behaviour.

Of the limited research conducted exploring T2D prevention and risk on the SA population, much of this is dated, and health care policy and practice have moved forward in recent years. With the increased prevalence of T2D in the SA population and the increase in SA diversity within the United Kingdom, if we are to reduce health inequalities, there is need to explore SA peoples' understanding, perception of T2D risk and prevention behaviours. There is also a need to examine how their sense of meaning is informed by their social and cultural environment, which may influence their acceptance and relevance of any interventions aimed towards them. This study has sought to generate a grounded theory (GT) to understand how SA individuals create and construct the meaning of T2D prevention and how this meaning influences their lived behaviours.

Methods

Design

This GT (Birks & Mills, 2011; Corbin & Strauss, 2008, 2015) qualitative study explored T2D risk perception, health beliefs, and behaviours within the SA community. GT gathered and analysed data across a heterogeneous sample of SA participants to produce a theoretical account of participant concepts that were related to one another in a cohesive whole.

Recruitment and data collection

Following ethical approval from a UK university, study recruitment included twenty male (50%) and female participants without a diagnosis of T2D, aged between 25 and 62 years (mean = 38 years). The recruitment procedures included 'networking', a form of snowball sampling (Waters, 2014), the lead author contacted various SA communities and religious settings to advertise and promote the study across the North West of England. Potential participants, who were SA and able to participate in an interview, were introduced to the interviewer via the gatekeeper of the venue. The introduction process helped the interviewer build rapport and familiarity with participants before the interview commencing. Participants were not eligible to participate if they had a diagnosis of diabetes (any type) or a mental health condition. After providing informed consent, one-to-one interviews took place in community/religious venues across North West of England. Semi-structured interviews ranged between 20 and 75 min (with a mean duration of 50 min) and participants were invited to conduct the interviews in their preferred language, although all choose to conduct them in English. The interview schedule included topics covering familiarity with diabetes; health beliefs regarding T2D, exercise, and physical activity; diet; and social influences on health behaviour. These topics guided the interview and allowed the researcher to explore the participant's knowledge and perception of T2D (see Appendix S1).

Participants were reminded that they had the right to withdraw from the interview or not to answer any questions. Throughout, the interviewer remained neutral, empathic, and adopted a non-judgemental approach using active listening techniques (Cryer & Atkinson, 2015), allowing participants to express themselves in their own words. At the end of the interview, participants were invited to add any further comments, subsequently debriefed and thanked for their contribution.

Data analysis

This symbolic interactionist GT employed the 16 essential assumptions of grounded theory methods (Corbin & Strauss, 2008, pp. 6–8), which included concurrent data collection and analysis; constant comparative analysis; initial coding and categorization of data; intermediate coding; selecting a core category; advanced coding; theoretical integration; theoretical sampling, theoretical saturation; theoretical sensitivity; and writing memos ('memoing') (Birks & Mills, 2011, p. 9).

Specifically, the interviews were digitally recorded and transcribed verbatim (using pseudonyms). To ensure meaning and interaction between the analyses, concurrent data collection, and analysis commenced, and a constant comparative analysis occurred between the two coders (first and last authors). This process shaped the development of the questions for subsequent interviews (informed via memoing and discussed during ongoing reflexivity, between first and last authors) (Appendix S1). Later participant selection aided theoretical sampling (to target a broadly representative sample the SA population- Indian, Pakistani and Bangladeshi descent, living in the North West of England (Office for National Statistics, 2012), and also to recruit participants born in the United Kingdom and those who had immigrated- See Table 1 Participant Characteristics). Theoretical saturation transpired as part of this GT process (Birks & Mills, 2011, p. 9; Starks & Trinidad, 2007). Saturation was achieved through the interview iterations, which focused questions towards the analytical categories (see Appendix S1). Following analysis, participants were invited to reflect on the interpretations of data, as part of the analytical triangulation process, and such reflections were incorporated into the final GT.

Table 1. Participant Characteristics

Participant	Age	Gender	Ethnicity	Duration (years)	Religion	Area
1	35	Male	Indian	2–3	Hindu	Bolton
2	30	Female	Indian	4	Hindu	Bolton
3	30	Female	Indian	8	Hindu	Bolton
4	35	Female	Indian	10+	Muslim	Bolton
5	35	Male	Pakistani	15+	Muslim	Bolton
6	45	Male	Indian	14	Muslim	Manchester
7	47	Male	Indian	12–13	Muslim	Manchester
8	46	Female	Indian	3	Muslim	Manchester
9	54	Female	Indian	8–9	Muslim	Manchester
10	40	Male	Indian	17	Muslim	Manchester
11	35	Male	Indian	4	Hindu	Bolton
12	37	Female	Indian	2 months	Hindu	Bolton
13	35	Male	Indian	9	Hindu	Preston
14	45	Female	Indian	3	Muslim	Blackburn
15	45	Female	Bangladeshi	14	Muslim	Blackburn
16	40	Male	Bangladeshi	10	Muslim	Blackburn
17	43	Female	Bangladeshi	6	Muslim	Blackburn
18	29	Male	Pakistani	29	Muslim	Bolton
19	27	Female	Pakistani	27	Muslim	Blackburn
20	35	Male	Pakistani	35	Muslim	Manchester

Researcher description and methodological rigour

Strategies to ensure the ‘trustworthiness’ of analysis in this study (Cooney, 2011) included the following: meticulous record-keeping promoted a clear decision trail and interpretations of data were consistent and transparent (Noble & Smith, 2015). Researcher triangulation (Heale & Forbes, 2013) occurred via a diverse research team (all authors), which promoted objectivity between the researcher’s position and the analysis: The lead author was a male of SA ethnicity and researcher with specific interests in diabetes risk perception. The lead researcher conducted all the interviews and led the analysis. The corresponding author was a White female, a Registered Health Psychologist with expertise in qualitative methodology and research interests within diabetes. The second author was a Black, male Chartered Psychologist and the third author, a White female Reader in Dietetics, both of whom had research interests in diabetes. The fourth author was a SA female with expertise in GT research and T2D.

A process of reflexivity and audited discussions occurred between authors, throughout the data collection, analysis, and write-up to ensure rigour in the quality of qualitative analysis conducted (Reynolds et al., 2011). Direct quotes from a range of participants acted as evidence to support commentary (Charmaz, 1990) and to be transparent in context (Noble & Smith, 2015). Annotations following quotes represent the participant identifier (e.g., P7F = Participant number 7, Female). The authors confirm that the raw data examples supporting the findings of this study are available within the article. Due to the nature of this qualitative research, in line with legal and ethical processes, participants of this study did not agree for their transcripts to be shared publicly, so supporting data beyond the sample quotation extracts is not available.

Findings

Figure 1 depicts the GT model presented within these analytical findings. The superordinate category Culturally Situated Risk Perception explored the concept of

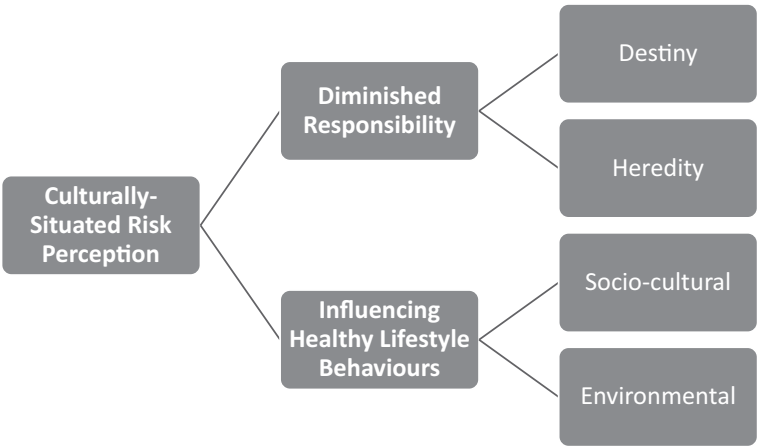


Figure 1. A grounded theory model representing the elements of T2D risk perception and the influences of preventative behaviours in SA general population.¹The superordinate category Culturally Situated Risk Perception is explained via two core categories: (1) Diminished Responsibility, informed by the sub-categories of Destiny and Heredity, (2) Influencing Healthy Lifestyle Behaviours, informed by the sub-categories of Socio-cultural and Environmental.

T2D risk perception and subsequent preventative behaviours for the SA community and is explained via two core categories: (1) Diminished Responsibility, informed by the sub-categories of Destiny and Heredity, (2) Influencing Healthy Lifestyle Behaviours, informed by the sub-categories of Socio-cultural and Environmental. The categories presented were not set apart; rather, these categories entwined and informed one another.

Core category: Diminished Responsibility

Participants were typically unaware, or indeed ignored the concept of increased T2D risk, and failed to prioritize preventative health behaviours. Most, but not all, of the participants, reported a poor understanding of T2D, not recognizing the symptoms or causes of the condition. Participants reported a very simplistic understanding of T2D, referencing it as a 'sugar condition'. Knowledge of the causes, consequences, and preventative nature of T2D was varied but limited. Instead, participants focused their thoughts towards religious values and beliefs, over and above any consideration for their health needs. When health behaviours were deliberated, T2D was described as an 'inevitable' social norm because of genetic predispositions within SA populations.

Members of my family don't know what diabetes is, although it runs in my family, there are certain members that are totally naïve to what diabetes is. (P8, F)

As SA individuals, all participants were considered as high(er) risk of developing T2D compared to the general population. However, there was a clear sense of detachment from this concept for each participant. For example in the answers given, nearly all participants referred to others in their explanations, reverting to: we, they, you, as opposed to owning their beliefs and using: I, my, me. Overall, participants presented a sense of 'diminished responsibility' related to their powers to reduce their risk of developing T2D. This diminished responsibility was most often attributed to an external locus of control, namely influenced by their 'destiny' or 'heredity' factors. External locus of control was not mutually exclusive, with participants linking both their genetic predisposition and their sense of (family) destiny together. In turn, their considerations to engage in behaviour change, to improve their health or lifestyle by, for example, attending a T2D prevention programme, were perceived as futile.

Destiny

The majority of participants considered their lives as preordained, ultimately believing that God was in control (of their lives, including health status) and this was linked with the notion of 'inevitability' and diabetes running in the family. In other words, promoting a belief that 'T2D may be a person's destiny (as a form of punishment or other)':

They do say it they start saying oh I'm going to die anyway and even if I have it, it's written in my kismet (destiny), there is nothing I can do about it, if I am going to get it then I will get it. (P7, F)

T2D was considered an 'inevitable disease if given to them by God'. Participants presented a sense of helplessness and diminished responsibility to be proactive and make informed decisions about their health behaviour.

What I'm saying is it's all a master plan, it's what you're written with. It's what you come within your kismet [destiny]. It's going to happen; you can't just say I'm doing the right thing, and I'm not going to get this, and I'm not going to get that because I'm controlling myself, I am eating healthy. If you (are) going to get it, you're going to get it, that's my belief and that's my family's belief. If we have diabetes in the family, this is part of the master plan. (P13, F)

Heredity

Personal risk and cause were also attributed to T2D being considered hereditary.

They see their grandparents with it they still all right, not knowing actually, what's going on inside them. They may be struggling. They think you're old, so you (are) going to be ill, you're old, so your joints are going to hurt. But this is not the case. My community need to understand that diabetes is a massive health issue, and something needs to be done about it. (P18, M)

T2D was considered a 'part of life', a common disease and broadly accepted within the SA community. Most participants reported having a family or friend diagnosed with T2D: 'My family, my girlfriend's family and the community I am from there's at least five or six people I know' (P1, M). Family history, destiny and genetic hereditary were accepted as the key determinants for the onset of T2D:

So many Asian people oh yeah my mum's got diabetes it's normal oh yeah my mum's got diabetes as well we started treating it as normal actually it's a lifelong condition when my mum first got it, it was a shock she was one of two where's on my dad's side everybody has it so is a shock that my dad doesn't have it we don't look at the implications we take it so normal. (P1, M)

T2D was not considered a serious health condition, rather an ordinary health condition within the community, whereby people 'live with diabetes'. In this context, T2D has become a social norm within the SA population. People from SA community witness 'family and friends who are coping with diabetes' hence such observations reduced perceived severity of T2D and reduced the value of assessing T2D risk, given it is considered an 'inevitable' condition. Overall participants viewed fate linked to hereditary, luck and God as being responsible for their life (and health) consequences, despite their actions.

Cored category: Influencing healthy lifestyle behaviours

Specific religious beliefs and cultural obligations had an impact on self-care and risk prevention behaviours. Social and cultural interactions, and the experiences within the local environment in which participants lived, influenced engagement with lifestyle behaviours (namely dietary, physical activity, and smoking behaviour). Social norms and expectations linked to the values, needs, and expectations of significant others (e.g., family members, community, or religious members) 'got in the way of' engaging in healthy lifestyle behaviours. Some participants understood diet and obesity were contributing factors of T2D, although were unsure 'how to' prevent T2D with the use of healthy eating, and also recognizing any such engagement in healthy eating may delay, but not prevent the 'inevitable T2D' given their destiny or genetic predisposition. Often despite having knowledge of the relevance of diet, any such knowledge and subsequent behaviours were

superseded by social-cultural norms, expectations and beliefs, and their surrounding environment.

Socio-cultural

Typically, SA people prioritized family and religious obligations over the pursuit of personal health activities (e.g., committing time to improve lifestyle behaviours such as diet and activity were not prioritized). 'Family needs come first' was a socio-cultural explanation offered for not changing lifestyle behaviours. For male participants, a strong work ethic meant they dedicated their time working very long often anti-social hours. Participants presented stereotypical descriptions and dismissive attitudes towards health.

He makes sure the family has been taken care of and work and work and work, and he doesn't think about himself. (P6, F)

Participants acknowledged that within a SA household, women typically held the primary responsibility for domestic chores and household responsibilities.

We always have big portion sizes compared to the Indian community and the majority of our typical curry's and foods has to include Ghee in it. That's how we were brought up. (P18, M)

Women were expected to ensure SA traditional food practices were maintained and provided to the rest of the family, ensuring that all were catered for (including 'elders specific food' preferences). Ultimately, this meant that making adaptations to cooking practices, recipe compositions, or meal planning to incorporate healthy eating recommendations were not simple or easy to implement.

The mother is always cooking; I'm talking about the Asian women, forget the men they always sitting down, women who are actually always running around feeding the kids and husband. (P7, F)

Female participants felt they were engaging in physical activity via caregiving, housekeeping, and routine daily activities, so extra time dedicated to physical activities was not committed. Taking 'time out to go exercising' was suggested as culturally unacceptable. Cultural acceptance and fear of causing social offence greatly influenced participants' commitments to healthy lifestyle behaviours. Participants made direct reference to complying with hospitality gestures and consuming traditional SA foods at social occasions (e.g., weddings, religious meetings, and events). Food was considered central to maintaining cultural connections and relationships within the community and extended family. Participants highlighted that communal eating of traditional Asian food was central to their social and cultural lives, which inferred a 'social pressure to eat'.

Environmental

Food choice was affected by cultural norms, such as social acceptance, family expectations, and recipes. Food was considered central to maintaining cultural connections with 'homeland' and was used as a tool for maintaining relationships within the family and community. However, food consumption was influenced by the local environment promoting SA traditional, and often unhealthy, food types.

Over the past five years there are dessert places everywhere (you can) find shisha houses that offer desserts can you (you can) see a lot of young people attending these places. (P4, M)

Most participants recognized their local area had an 'influx of takeaways, dessert and shisha places'. One participant claimed a typical night out would include traditional food such as 'curry and then visit dessert and shisha places to fix their cravings'. The promotion and frequency of unhealthy fast food places and takeout reinforced the acceptability of such foods within an area and made it much harder for people to identify with and act upon, 'generalist and idealistic' messages about healthy eating for T2D prevention.

Participants within this study defined themselves as non-smokers and referenced this to cigarette smoking, although they made references to smoking shisha as an individual behaviour (tobacco product that is smoked communally in a water pipe, narghile, or hookah). In this context, smoking shisha and attending dessert restaurants have become commonplace in SA community, considered as maintaining cultural connections and relationships (SA meeting places), bringing people together socially, acting as a 'social lubricant'. SA people reported shisha was fashionable, socially acceptable, and an alternative to drinking. Moreover, shisha may also be promoted at cultural functions like weddings, as a signal of welcoming or families may use shisha in their homes, 'complementing other activities, like watching TV'.

It's fun to sit in a place where there's music going on you can get fancy new drinks some people enjoy the smoking side and some people who don't smoke, but we'll go out and sit with their friend's whether we're at home, or we are out it's become this is the norm. (P1, M)

Shisha was not (typically) recognized as an unhealthy lifestyle behaviour within the SA community, and cessation of shisha smoking was not considered a modifiable risk factor for T2D. Indeed, the local environment appears to actively encourage this behaviour within the SA community setting. Hence, shisha is an example of a socio-cultural and environmental activity that has a significant influence on SA peoples' engagement in healthy lifestyle behaviours. However, this may be an undetected behaviour that also influences risk perception of T2D, or indeed may itself have a direct effect of prevalence of T2D given smoking status is a modifiable risk factor.

Discussion

To our knowledge, this is the first UK study that has explored the understanding of T2D risk and prevention amongst the general SA population. Previous research has focused primarily on individuals diagnosed with T2D (Lawton et al., 2008; Patel et al., 2015); or a specific community SA cohort (Grace et al., 2008); or explored a specific modifiable risk factor, such as diet (Emadian et al., 2017). Previous research has proposed practical suggestions such as lack of time and cultural obligations as explanations for failure to engage in lifestyle behaviour change or have suggested that SA people lack knowledge of T2D risk. This study offers a new GT which has drawn upon a range of theoretical explanations in order to substantiate SA lay understandings and meaning of T2D preventative and risk management behaviours (Suddaby, 2006). A new GT highlighted the complexities that are embedded in the SA community and how these complexities inform participant's T2D beliefs and subsequent lifestyle behaviours.

The superordinate category of Culturally Situated Risk Perception incorporates a complex psychological understanding of the formation of T2D risk, which takes account of the social, cultural, and community-based environments, which generates and encapsulates individuals, lived experiences and thus develops and maintains their risk perception and lifestyle behaviours. The core categories diminished responsibility and influencing health lifestyle behaviours can be explored with reference to a range of psychological theories. Our findings suggest that religion and culture influences and shape perceptions of susceptibility to illness and of the benefits of biomedical health practices such as screening for T2D. This is important as all cultures have systems of health beliefs to explain what causes illness (Lucas et al., 2013), how to understand, manage, and cope with the illness and this is pertinent to the SA community.

Participants focused on the concepts of destiny and heredity as primary explanations for future diagnosis of T2D. With consideration of the Health Belief Model (Becker, 1974), participants recognized their susceptibility of T2D as a 'social norm' (see Social Norm Theory, Perkins & Berkowitz, 1986) for SA people. Indeed, as noted in previous research, SA people are aware that they are more vulnerable to T2D (Gujral et al., 2013). Previous research has identified that people already diagnosed with T2D, underestimate their risk for subsequent complications; hence, they may be less likely to adopt recommended behaviours from health care professionals (Rouyard, Kent, Baskerville, Leal, & Gray, 2017). However, within this study, SA people did not have a low-risk perception; instead, they acknowledged and accepted the high risk of T2D within the SA community. Although, individuals presented a low level of conceptual understanding regarding the various factors that influenced diabetes risk.

Moreover, the perceived severity of T2D was not acknowledged but recognized as an ordinary 'lived with' condition across their community. Here, participants made social comparisons to other SA people, within their family and SA community, already diagnosed with T2D (Social Comparison Theory, Festinger, 1954). People have an innate drive to evaluate themselves, often in comparison to familiar others, to assess their skills, beliefs, and attitudes. The observations and lived experiences of other SA people living with T2D in their community reinforced the perceptions that it was 'not a serious condition' and could be managed, hence if they were diagnosed, they could manage it too. To inform SA individuals of their 'risk' or indeed to invite an individual to attend an intervention to reduce their risk (such as a referral to NDPP), may simply create abstract information. The benefits for engaging in any recommended preventative T2D health behaviours are outweighed by the social-cultural costs associated with changing behaviour. To engage in such, abstract information would be to move away from the accepted and expected cultural values within a SA community, and this would be challenging for individuals. Hence, healthy lifestyle advice or implementation of behaviour change is not implemented.

The United Kingdom, as a western society, primarily delivers health care through individualized behavioural health promotion. However, as described here, these participants often revert to cognitions of belonging to a collectivist culture. The grounded theory presented within this study presents the essence of socially sensitive and context-dependent belief systems that are influencing an individual's engagement in healthy lifestyle behaviours. Of relevance here is the consideration of Culture-as-Situated-Cognition theory (Oyserman, 2015), whereby participants thought of themselves and their lifestyles within a 'we' (the SA family) and not 'I' lifestyle. Here, the concept of diminished responsibility (Zeegers, 1981) becomes apparent. In the SA community, fatalism and religion are influential on belief systems. For some study participants, the

concept of destiny for health and well-being were manifested in the belief that ‘God is responsible’ and illness prevalence is connected to ‘luck and fate’. This sense of diminished responsibility can be linked to the concept of External Locus of Control (Reknes, Visockaite, Liefoghe, Lovakov, & Einarsen, 2019), whereby the participant’s T2D risk perceptions were irrelevant in the sense that the onset of T2D would be informed by chance, fate or others (such as God) (Rotter, 1966). Ultimately, participants presented an external locus of control for their lifestyle behaviours, their socio-cultural and environmental influences informed their lifestyle behaviours and, thus, engagement with T2D preventative recommendations. In this diverse SA sample, T2D was considered an inevitable social norm; lifestyle changes may delay but not prevent T2D for this population group. This finding is contrary to Grace et al. (2008) who reported that in most cases, Bangladeshi participants perceived people without diabetes to have internal control (demonstrating their individual responsibility for engaging in preventative health behaviours) for which T2D was considered preventable.

Healthy lifestyle messages delivered to an individual regarding T2D risk perception may not resonate with SA individuals, especially if these messages mismatch with their cultural expectations. Culture-as-Situated-Cognition theory proposes that we have an automatic tendency to draw upon cultural expertise to make predictions about everyday behaviours (e.g., as discussed in this study, cultural practices regarding dietary behaviour). Oyserman, Smith, and Elmore (2014) propose that if we can approach a collective mindset; we may be able to change beliefs.

Current investment in T2D prevention has focused on intervention delivery (NDPP) at an individual level. There is a need to acknowledge the collectivist-individual cognitions that SA’s negotiate when engaging in lifestyle behaviours within the context of everyday lives, embedded within their cultural and social interactions. Health promotion messages need to help people to activate their individual mode and support them to recognize and engage with the collectivist cultural pressures that may interfere with conscious cognition to engage in T2D risk prevention activities. Recently, Rodrigues et al. (2020) explored stakeholders’ (e.g., service users, programme commissioners, referrers, and intervention deliverers) perceptions of the NDPP and they also highlighted the need to tailor the NDPP advice to service users’ social, cultural, and individual preferences.

It is important to highlight that the collectivist nature of the SA communities point towards a need to change the way public health and health care messages are communicated to individuals or groups of people. There is a need to encourage individuals to activate individual health behaviours and seek encouragement, support, and acceptance from their collectivist communities. Moreover, this research also emphasizes the need to consider targeting macro-behaviour of the community and social environment. Finally, it is important to highlight how we ask and engage SA people to evaluate their lifestyle behaviours. For example, SA people may define themselves as non-smokers, despite participating in Shisha smoking regularly at home or community events.

Implication for practice

SA community groups are often considered ‘hard to reach’ in terms of their engagement with screening programmes (e.g., NHS health checks and health promotion interventions) (Attwood, Morton, & Sutton, 2016). The results of this study are therefore relevant to the key aims of the NDPP (PHE, 2016) in the United Kingdom and similar worldwide initiatives (e.g., in America and Europe). In order to motivate and engage SA people to take preventative action, there is a need to improve risk perception within this community.

Public Health and the NHS could use the findings to provide avenues to improve risk perception, before advising participants to make changes in their lifestyle and also find ways to accommodate the participant's needs while respecting their cultural values and beliefs (National Institute for Health and Care Excellence, 2012; Seeleman, Suurmond, & Stronks, 2009). In essence, there is a need to change cognitions within the community in order to encourage people to engage in any behaviour change; in this case, we should first act upon assessment T2D risk information.

The findings from this study can be used to develop effective cultural tailored education and prevention programmes, which may offer significant help in improving the health of minority communities. When designing new interventions and services, it is paramount that patients and the public are included throughout in the co-production and development of interventions, so that they connect with, believe in and associate with such community-engaged interventions.

Health professionals should consider addressing key issues noted in this study as part of education and intervention programmes to improve knowledge and self-care behaviours. These include ensuring all individuals have a requisite level of knowledge about T2D and its complications, confirming that individuals understand the importance of implementing self-care behaviours, and with a core focus of creating solutions for individuals to meet cultural, religious, and social obligations while maintaining healthy lifestyles.

These findings may also have relevance to those SA people already with a diagnosis of T2D. We must consider the issues associated with diminished responsibility linked to destiny, hereditary perceptions, the environment, and social-cultural influences that SA people face in their daily lives that influence their engagement with healthy lifestyle behaviours.

Strengths and limitations

The comprehensive approach to ensuring quality and integrity within the methodology and analysis conducted for this research is noteworthy (Meyrick, 2006). To be transparent and demonstrate rigour, this research has been conducted and the article written with consideration of the Reporting Standards for Qualitative Research (American Psychological Association, 2019; Levitt et al., 2018). Methodological integrity and trustworthiness of the study included the use of interview schedules; focusing the interview towards the research questions; and the researcher remaining open and not bias thus assuring credibility (Jacob & Furgerson, 2012). Conformability was achieved through ongoing researcher reflexivity, completed throughout by the diverse experiences and expertise of the research team (Stewart, Gapp, & Harwood, 2017). GT method, as constituted by constant comparing of data, coding, categories, and memos, further promoted reflective thinking (Giles, King, & de Lacey, 2013; Strauss & Corbin, 1990). The process of memo writing during study conceptualization, before and after interviews, and during the analytical processes further enhanced the analytical commentary through researcher reflections (especially between first and last authors), which considered the acknowledgement of theoretical stances and literature, although the focus remained on the research data itself (Lempert, 2007).

We propose that this original study considers a broad context relevant to the psychological understanding of T2D risk perception, which can be applied directly to behaviour change interventions relevant to the individual (micro-behaviour) and community and population-based approaches to health communication (macro-

behaviour). While it is important to acknowledge that transferability of findings to broader context is more challenging to demonstrate in qualitative methods, this GT offers a foundation for future interventions and this study represents the first step towards understanding risk perception of T2D in the SA population. Nevertheless, caution should be taken in transferring these findings beyond the context of a SA population living in North West England, and further testing of the grounded theory is warranted.

While previous research has highlighted various challenges associated with recruiting to and completing research with ethnic minority and faith groups (Quay et al., 2017), it is noteworthy that the initial recruitment to this study was slow, and participants reported some uncertainty about participating. The process of seeking support to promote the study from community leaders was considered an essential step in the recruitment process and, in addition, the first author, SA himself, provided time and effort to discuss any concerns with participants. We acknowledge that SA women participants may have been apprehensive to speak openly to a male researcher. Participants could have opted to complete the interview with an alternative researcher (4th author, SA female) although this was not utilized. Overall, the participant sample included men and women across a range of age groups, from a heterogeneous SA group and thus the authors deemed this sample to be representative of the local SA population (aiding theoretical sampling). We note that the participant's age range from 29-54 years, and therefore, the analytical findings should be treated with caution if considering older adults. We also highlight that participants varied in their cultural lived experience in the United Kingdom, as the study included participants born in the United Kingdom (up to 35 years old) and SA participants who had emigrated to the United Kingdom (living here between 2 and 17 years).

Conclusion

The grounded theory within this study presents a core category of Culturally Situated Risk Perception, informing SA peoples' understanding of risk and subsequent preventative behaviours. SA participants were influenced by external factors which lead them towards a sense of diminished responsibility in understanding and engaging with T2D prevention and risk acceptance. Social and environmental factors influenced their engagement with healthy lifestyle behaviours.

Failure to acknowledge the cultural-situated T2D risk perception relevant to health promotion and illness messages may account for the issues identified with health care engagement in the SA population. This study has relevance to both public health broadly, and those working within the diabetes field.

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Conflicts of interest

All authors declare no conflict of interest.

Author contributions

Ishfaq Vaja (Conceptualization; Data curation; Formal analysis; Investigation; Methodology; Validation; Writing – original draft; Writing – review & editing) Frederick Kanayo Umeh (Conceptualization; Methodology; Supervision; Validation; Writing – review & editing) Julie Abayomi (Supervision; Validation; Writing – review & editing) Tasneem Patel (Formal analysis; Methodology; Writing – review & editing) Lisa Newson, D.Health Psyc. C.Psychol. AFBPsS, Registered HPC (Conceptualization; Formal analysis; Funding acquisition; Investigation; Methodology; Project administration; Supervision; Validation; Writing – original draft; Writing – review & editing).

Data Availability Statement

Raw data have been included as evidence via extracted quotes from verbatim transcripts as samples of evidence. Full transcript release has not been reviewed ethical approval or participant consent. For further study details, please contact corresponding authors.

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Supporting Information

The following supporting information may be found in the online edition of the article:

Appendix S1. Initial Interview Topic Guide.

Table S1. Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist.