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EXPLORING STEREOTYPING AND HEALTH OUTCOMES IN BLACK WOMEN WITH SICKLE CELL DISEASE

SECTION A: Is the Strong Black Woman stereotype associated with depressive symptoms in Black women: Evidence from observational studies?

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Section B: Exploring the Strong Black Woman stereotype among Black women with sickle cell disease: An intersectional perspective on health-related quality of life in a clinical population

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Summary

Section A

This systematic literature review explores the existing empirical research on a culturally influential psychosocial construct, the Strong Black Woman stereotype, and depressive symptoms in Black women. The review summarises and quality assesses 18 studies that explored the mental health impact of the SBW stereotype. Clinical implications include the important contribution of discrimination on health inequalities. Research implications include a need to standardise a measure of the SBW stereotype, and continued exploration of underlying mechanisms by which the stereotype influences outcomes.

Section B

There is a wealth of theoretical and qualitative evidence pointing to the detrimental impact of discrimination on health; however, there is a need for further quantitative research to bolster these findings. This cross-sectional study explored the contribution of the Strong Black Woman stereotype to health-related quality of life in Black women with sickle cell disease, and whether this contribution was impactful in the presence of demographic and clinical factors. Hierarchical regression analyses were conducted on data from 48 Black women with sickle cell disease. The findings indicate the importance of understanding the interactions between Black women’s perception of themselves and discrimination, and of integrating culturally salient psychosocial factors into mental health care of marginalised communities.

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EXPLORING STEREOTYPING AND HEALTH OUTCOMES IN BLACK WOMEN WITH SICKLE CELL DISEASE

SECTION A: The Association between the Strong Black Woman Stereotype and depressive symptoms in Black Women: Evidence from observational studies

Word Count: 7,159 (plus 617 additional words)

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Abstract

Background and Objective: The Strong Black Woman stereotype is understood as a gendered-racial construct that imposes ideals of resilience, self-sacrifice, and caregiving on Black women, often in the context of adversity. While the negative effects of discrimination on the mental health of racially minoritised populations are well-documented, the impact of intersecting discrimination—such as gendered-racial stereotyping—remains underexplored. This review aimed to synthesise observational evidence on the association between the SBW stereotype and depressive symptoms in Black women, addressing a significant gap in understanding the mental health consequences of this stereotype.

Methods: A systematic literature search across databases such as PubMed and PsycINFO identified observational studies investigating how adherence to the SBW stereotype relates to depression. These studies were subsequently narratively synthesised.

Results: Eighteen observational studies were identified, providing preliminary evidence for a direct association between the SBW stereotype and increased depressive symptoms in Black women. However, analysis of the SBW stereotype as a multidimensional construct revealed both negative and positive effects on depressive symptoms. These results highlight the need for further research on the SBW stereotype, with consideration for wider contextual factors that exacerbate or protect against the effects of discrimination.

Conclusion: These findings contribute to the expanding body of research on how discrimination operates to influence mental health and wellbeing in racially marginalised populations.

Key Words: Strong Black Woman, Stereotyping, Depression, Common Mental Health Difficulties, Health Inequalities

Introduction

Common mental disorders (CMD), including conditions such as depression and depressive symptoms, are a major health concern around the globe. Depression is considered to be a mental health disorder characterised by ‘low’ mood and a loss of pleasure in activities for long periods of time (National Institute for Health and Care Excellence (NICE), 2011). However, symptoms of depression without a formal diagnosis are also thought to be widespread in the general population, and can include symptoms such as fatigue, feelings of worthlessness and decreased concentration (American Psychiatric Association, 2022). An estimated 280 million people across the globe experience depression, with this being about 50% more common among women than among men (World Health Organisation (WHO), 2023). This gender discrepancy in depression prevalence is consistent in the UK, where women are approximately 2.5 times more likely to be diagnosed with depression than men (NICE, 2022). Reasons for this discrepancy could include differential manifestation of depressive symptoms, but also differences in reporting symptoms, which may be obscuring more accurate accounts of prevalence (Call & Shafer, 208). Therefore, while gender differences do not necessarily evidence a higher prevalence of depression in women, it does highlight the differential experience of mental health based on different social factors.

Social factors play a pivotal role in shaping an individuals' environment, thereby influencing their health and quality of life (Wilkinson & Marmot, 2003). These factors are known as social determinants of health. While various social determinants of health – including gender, age, and socioeconomic status (SES) – contribute to the vulnerability of certain populations to adverse health outcomes, studies indicate the profound impact of discrimination on health outcomes. Extensive interdisciplinary research has demonstrated that discriminatory stressors can adversely affect the emotional and physical wellbeing of minoritised populations (Paradies, 2006; Paradies et al., 2015; D. R. Williams & Mohammed, 2009). These stressors have also been identified as contributing factors to disparities in economic and health outcomes (Krieger, 2014). For example, the UK Longitudinal Household Study demonstrated that cumulative exposure to racism was associated with incremental negative long-term effects on the mental health of ethnically minoritised populations (Wallace et al., 2016). While research on the health impacts of discrimination is well-established within the social sciences, the literature has primarily focused on examining the impact of individual sources of discrimination. However, there has been less emphasis on studying the effects of multiple, or intersecting, forms of discrimination – which more accurately represent real world experiences of discrimination (Cea D’Ancona, 2017).

Multiple discrimination refers to circumstances where an individual belonging to multiple marginalised groups experiences discrimination that is more complex than discrimination based on a single dimension (European Commission, Directorate-General for Employment, Social Affairs and Inclusion & Directorate-General for Employment, 2007). This concept is exemplified in feminist intersectionality theory, where social identities are thought to intersect to form uniquely compounded experiences of oppression and privilege that are based on sociocultural power and hierarchy (Crenshaw, 1989; Shields, 2008). Research has demonstrated that individuals who report experiencing multiple discrimination face a heightened risk of developing major depression and subsequent depressive symptoms (Gayman & Barragan, 2013). For example, racial-gendered discrimination has been linked to poorer mental health outcomes in Black women such as higher psychological distress (Moradi & Subich, 2003 Thomas et al., 2008). In the UK, Black British women are thought to experience higher rates of CMD (29.3%) compared to White British women (20.9%) (McManus et al., 2016). Additionally, Black British women are more likely to experience poor outcomes such as detention under the Mental Health Act (National Health Service (NHS) Digital, 2023). This suggests that health outcomes may be impacted by multiple domains of identity simultaneously, and therefore, these factors must be considered in the understanding of discrimination in health.

The body of literature on multiple discrimination is growing, especially in the exploration of stereotypes. Stereotypes are defined as pervasive generalisations concerning the attributes or qualities of a specific group that significantly shape how an individual is perceived and treated in various contexts (Lun et al., 2009; Zhang et al., 2023). Much research on the psychological implications of discrimination applies Lazarus & Folkman's (1984) stress and coping framework, where discrimination can be understood as a stressor that initiates physiological stress responses (e.g., raised blood pressure) that in turn increases the risk of adverse health outcomes (Major et al., 2002). While not all stressful experiences lead to illness, certain types of stressors, particularly those that are unpredictable and uncontrollable, can be especially detrimental. Characteristics such as these are often found in experiences of discrimination (D. R. Williams & Mohammed, 2009), such as stereotyping. To shield themselves from the negative repercussions of stereotyping, marginalised communities may internalise (i.e., endorse) and accept these harmful stereotypes as a means of coping. For example, Wei et al. (2010) observed that ethnically minoritised individuals often internalise racist events as a coping mechanism in response to the stress of racial discrimination. Recent research by Gärtner et al., (2022) reinforces this notion by demonstrating that negative stereotypes related to warmth and competence contributed to higher levels of emotional distress and increased tendencies toward self-harm among individuals with mental health problems.

One commonly recognised stereotype is that of the Strong Black Woman (SBW), which portrays Black women as emotionally strong, independent and exceptionally resilient and caregiving (Settles, 2006; Woods-Giscombé, 2010). The most comprehensive conception of the SBW is from the Woods-Giscombé's (2010) Superwoman Schema (SWS) Conceptual

Framework. The framework was developed from focus groups with a demographically diverse sample of African American women. It provides a multidimensional conceptualisation of the cognitive, affective, and behavioural basis for the Strong Black Woman/Superwoman stereotype using five distinct dimensions: ‘obligation to present an image of strength’, ‘obligation to suppress emotions’, ‘resistance to being vulnerable’, ‘intense motivation to succeed’, and ‘obligation to help others’. While the concepts underlying the SBW stereotype may also be represented in universal ideals of femininity affecting all those identifying as women, the SBW is thought to be a construct unique to Black women due to its historical and sociocultural emergence. Traditional femininity, rooted in European culture, contrasts with Black femininity, which was profoundly impacted by marginalisation stemming from the Trans-Atlantic Slave Trade when Black women were forced to assume masculine roles due to the absence of men (Davis et al., 2018; Nelson et al., 2016). It is thought the SBW stereotype emerged partly in response to negative stereotypes portraying Black women as confrontational, promiscuous, or lazy when attempting to concurrently fulfill both traditionally feminine and masculine gender roles. Unlike these negative portrayals, the SBW stereotype presents a positive and empowering image of Black women on the surface. Yet, it also places immense pressure on Black women to overcome adversity without showing vulnerability, within a historical and sociocultural context that is not shared by Eurocentric femininity.

Consistent with this, a recent study showed that the SBW ideology uniquely predicted perceived stress among Black women, whereas traditional Eurocentric femininity norms did not (Davis et al., 2018). This indicates that the SBW ideology may be particularly relevant to the experiences of Black women. These findings align with patterns seen in the health inequality literature. For example, although incidence of breast cancer is lower across all ethnic groups as compared to White women, Black women were more likely to be diagnosed at a later stage of breast cancer compared to White women (Jack et al., 2009). Furthermore, despite similar overall survival rates, cancer-specific survival was significantly lower for Black women, attributed to late-stage diagnosis and differences in treatment (Jack et al., 2009). Additionally, Assari et al. (2017) found that perceived racial discrimination in healthcare was linked to poorer glycaemic control in Black men but not in Black women. These examples suggest that health outcomes are influenced by membership in multiple social categories, such as gender and race, underscoring the importance of accounting for these factors when addressing disparities. Ignoring the differences both between and within marginalised groups may obscure critical nuances.

A recent scoping review by Thomas et al., (2022) looking at the 25 years of research on the SBW summarised preliminary evidence that endorsement of the SBW stereotype at the individual level is linked to adverse mental health and physical health outcomes. However, a major finding was that the impact of the SBW stereotype is not uniform, as some psychosocial benefits at the individual level were noted in the literature. On the one hand, research has shown associations between SBW-endorsement and emotion dysregulation, maladaptive coping, and increased stress (Harrington, 2007; West et al., 2010; M. G. Williams & Lewis, 2019; Woods-Giscombé, 2010). This indicates that the SBW stereotype is deleterious to Black women's mental health and wellbeing. On the other hand, it is theorised that some aspects of the SBW stereotype may be protective. Due to the origin of the SBW stereotype in response to entrenched negative stereotypes, it is proposed that Black women reclaim the SBW stereotype to encourage strength within each other and foster solidarity (Davis & Afifi, 2019). Ultimately, Black women may find empowerment in the SBW stereotype, whilst simultaneously experiencing limitations and harm due to its presence.

The mixed findings on the benefits and drawbacks of the Strong Black Woman (SBW) stereotype underscore the need for further research to better understand its nature in specific contexts, particularly its co-occurrence with mental health difficulties. To the author's knowledge there have been no systematic reviews published on the mental health impact of the SBW stereotype. Therefore, the aim of this systematic review and narrative synthesis is to add to the extant literature by systematically synthesising evidence from observational studies on the association between the Strong Black Woman stereotype and depressive symptoms. This review may shed light on how the intersection of race and gender shapes distinct experiences of depression, thus, necessitating different approaches to the management of health inequalities. It is hoped that findings will provide important insights into the lived experiences of Black women with CMD, such as depression, in order to support identification of barriers to treatment and predictors of poor outcomes.

Method

This review was conducted and reported following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA; Page et al., 2021) guidelines as is considered best-practice. The novelty of this review was confirmed by searching the International prospective register of systemic reviews, PROSPERO, as recommended by Moher (2013).

Search Strategy

Four electronic databases were examined (PubMed, Embase, PsychINFO and Web of Science) in August 2023. As part of these searches, terms were entered using Medical Subject Headings (MeSH) and as keywords in the title/ abstract search function. The search strategy used in all databases is detailed below, including relevant terms sourced from previous reviews on the Strong Black Woman stereotype (Jefferies, 2022; Z. Thomas et al., 2022): *"(strong black woman OR superwoman OR raci* gender* stereotype) AND (depress* OR low mood OR common mental disorders OR wellbeing OR mental)"*. Given the relative infancy of this research area, no restrictions were applied to publication date or type, allowing for the maximization of relevant article retrieval. As such, grey literature (e.g., dissertations) were considered. Studies published in languages other than English were excluded due to limitations in researcher capacity, and non-human studies were also excluded. Reference lists of the articles recovered from database searches were also considered as a secondary sourcing method.

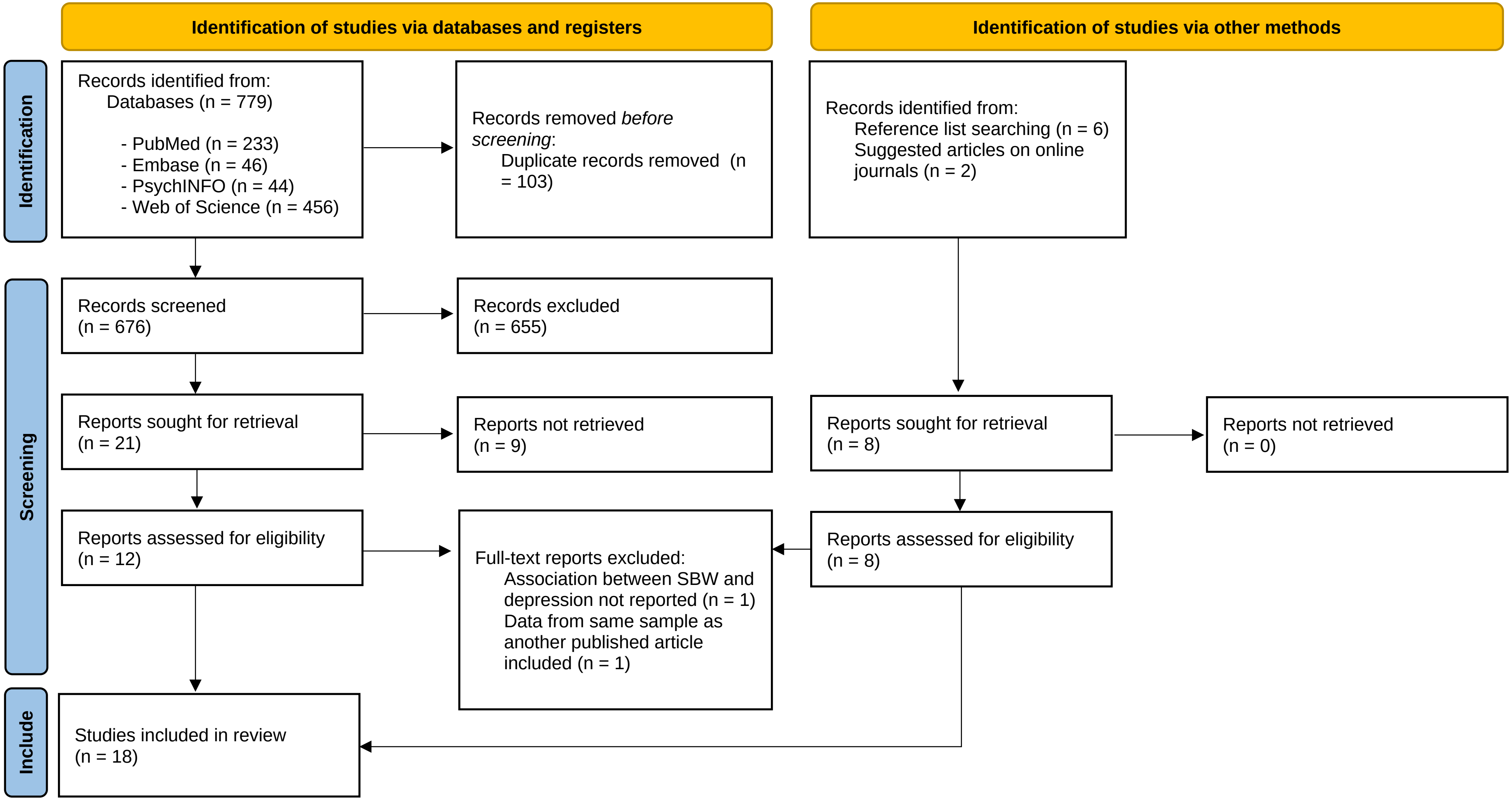
Study Selection

Firstly, all articles from the database searches were merged in the reference management software Zotero, before they were screened in two stages by one reviewer. Title/abstract screening took place first to remove obviously irrelevant reports. At the second full-text stage, ‘population, intervention, comparator, outcome(s) and study design’ (PICOS) criteria was used to aid study selection. The use of PICOS as a guideline is recommended when developing a review question and selecting studies (J. Thomas et al., 2023). Studies were considered if they quantitatively examined associations between measures of SBW-endorsement and measures of depressive symptoms in adult (over 18 years) populations of Black women. Comparators were expected to be between groups reporting different levels of SBW-endorsement as part of the studies sourced.

All observational study designs were considered, for example, cross-sectional, and longitudinal designs. Exclusions applied to studies that focused on other forms of reporting stereotypes (e.g., proxy reports of stereotyping), or gendered-racial stereotypes other than the SBW stereotype. Additionally, studies that did not include distinct and separate measures of these constructs were not considered for inclusion. Therefore, studies employing more general measures of mental health and wellbeing were excluded. Studies that reported on several health outcomes were included only if there was a separable measure of depression or depressive symptoms.

Figure 1

PRISMA Diagram.



Note. Diagram taken from Page et al., (2021)

Data Extraction and Quality Assessment

Information regarding the study characteristics, sample characteristics, operationalisation of variables, statistical methods, and main results pertinent to the review were extracted by one reviewer. Following this, the quality assessment was conducted. The Newcastle-Ottawa Quality Assessment Scale (NOS; Wells et al., 2024) was used as it is an appropriate systematic assessment of the risk of bias in a study. The NOS provides a structured approach for evaluating the risk of bias and methodological quality of case-control and cohort studies, with higher scores indicating higher study quality. However, it allows for flexibility in scoring and can be adapted for different types of observational studies, including cross-sectional studies. An adapted version for cross-sectional designs was used (Modesti et al., 2016), with scores out of a maximum of 10. Each study is judged on three categories, selection of study groups, comparability of groups, and the ascertainment of outcomes of interest. Good quality studies receive a minimum score of six.

The NOS is one of the most commonly used tools for assessing the quality of observational studies and is widely accepted in many fields of research and is recommended in PRISMA guidelines (Moher et al., 2009). While specific validation studies for the NOS in the context of cross-sectional studies may be limited, its reliability and validity have been demonstrated in the broader context of observational study designs (Lo et al., 2014; Stang, 2010), and it is widely used in peer-reviewed systematic reviews of cross-sectional studies (e.g., Herzog et al., 2013; Vivekanantham et al., 2019). Studies were not excluded from the review based on their NOS rating; however, the narrative synthesis considered the quality of studies during the narrative synthesis.

Results

Figure 1 displays the full study selection process as a PRISMA diagram. In total, 779 articles were retrieved across four databases and eight were identified from reference lists of relevant articles or other sources. After the exclusion of duplicates, 676 records were screened by title/ abstract. Title/ abstract screening resulted in the exclusion of 655 articles based on the established PICOS criteria. Following the exclusion of nine articles that could not be retrieved, 20 articles were identified for full-text screening. Of the articles that were screened by full-text, two were excluded for various reasons (e.g., data was sampled from the same study as another published article and looked at the same outcome of interest). Finally, a total of 18 articles were included in the systematic review for data extraction, quality assessment and narrative synthesis.

Data Extraction and Quality Assessment

An overview of the included studies is provided in the data extraction table set out in Table 1. The included studies were published between 2013 and 2024, and all studies were conducted on populations in the USA. Additionally, reported sample sizes ranged between 66 and 2,276 participants. A total of 6,053 individual cases in the sample population were represented by this review. The majority of studies conducted the bulk of recruitment within university settings, which is reflected in the generally low mean ages of samples. Most studies used regression-based analyses, measuring the association between the SBW stereotype and depressive symptoms. NOS scores of the included studies ranged from 3 to 9 (Table 1), with a median of 8 (see Appendix A for a detailed breakdown of NOS scores). The majority (16 out of 18) of studies were of good quality, scoring six or over. While many studies were rated highly for aspects such as the use of validated tools and adjustment for relevant confounders (e.g., age, SES), overall quality ratings were lower in areas such as the use of objective measures (i.e., the ‘assessment of outcomes’ factor) and the risk of selection bias due to how missing data was handled (i.e., the ‘non-respondents’ factor).

Table 1

Summary of Articles Included in Systematic Review

Authors (year), *Country*	Sample characteristics	Study characteristics	Exposure measurement	Outcome measurement		Statistical methods	Main findings in relation to review	Quality Rating (NOS Score)
	N (Mean Participant Age in Years)	Study design (Recruitment setting)	SBW measure (*subscale*, [number of items])	Depressive symptoms (subscale, [number of items])	Other relevant outcome(s)	Analyses (Confounders adjusted)		
Abrams et al., (2019), *USA*	194 (37.53)	Cross-sectional, survey (University students, community)	One subscale from the Stereotypic Roles of Black Women Scale (SRBWS; A. J. Thomas et al., 2004), (*Superwoman*, [11])	Center for Epidemiologic Studies Depression Scale (CES-D 20; Radloff, 1977), [20]	Silencing the Self-Scale (STSS; Jack & Dill, 1992), (*silencing the self, externalised self-perception*, [31])	Regression, mediation (Age and income)	SBW as measured by 'obligation to manifest strength' significantly predicted depressive symptomatology. Self-silencing mediated this relationship, suggesting that the more strongly Black women feel obligated to be strong, the more likely they are to silence themselves and, in turn, develop depressive symptoms. Externalised self-perceptions mediated this relationship, suggesting that the obligation to manifest strength manifests in depressive symptoms through externalised self-perceptions.	8
Castelin and West (2022), *USA*	212 (20.44)	Cross-sectional, survey (University students, community, social media)	Two subscales from the Stereotypic Roles of Black Women Scale (SRBWS; A. J. Thomas et al., 2004), (*Superwoman* [11], *Mammy* [5])	One subscale from the Depression Anxiety Stress Scale (DASS-21; Lovibond & Lovibond, 1995), (*depression,* [7])	Depression Anxiety Stress Scale (DASS-21; Lovibond & Lovibond, 1995), (*anxiety* [7], *stress* [7])	Pearson's Correlation (None identified in bivariate correlations)	SBW-endorsement directly associated with higher psychological distress, including depressive symptoms specifically.	7
Donovan and West (2015), *USA*	92 (23.32)	Cross-sectional, survey (University students)	One subscale from the Stereotypic Roles of Black Women Scale (SRBWS; A. J. Thomas et al., 2004), (*Superwoman*, [11, of which 10 adapted from first-person pronoun to 'Black women' third person pronoun '])	One subscale from the Depression Anxiety Stress Scale (DASS-21; Lovibond & Lovibond, 1995), (*depression,* [7])	Depression Anxiety Stress Scale (DASS-21; Lovibond & Lovibond, 1995), (*anxiety* [7], *stress* [7])	Correlation, Regression, moderation (None identified in bivariate correlations)	SBW-endorsement was not directly associated with depressive symptoms. SBW moderated the relationship between stress and depressive symptoms, indicating that SBW-endorsement exacerbated the relationship between stress and depressive symptoms such that the highest level of depressive symptoms was reported by those with both the highest stress level and the highest SBW-endorsement. For those with low SBW-endorsement, stress was not significantly associated with depressive symptoms. For those with moderate and high SBW-endorsement, higher stress levels were associated with increased depressive symptoms.	5
Drakeford (2017), *USA*	289 (35.99)	Cross-sectional, survey (University students, social media, community)	Strong Black Woman Archetype Scale (SBWAS; Woods, 2013), (*mask of strength/emotional invulnerability* [14], *self-reliance and strength* [11], *caretaking/ self-sacrifice* [11])	One subscale from the Depression Anxiety Stress Scale (DASS-21; Lovibond & Lovibond, 1995), (*depression,* [7])	Africultural Coping Systems Inventory (ACSI; Utsey et al., 2000), [30] Courtauld Emotional Control Scale (CECS; M. Watson & Greer, 1983), [21]	Correlation, regression, mediation, moderated mediation (Age, income)	The measure used was strongly correlated with superwoman subscale. SBW-endorsement was positively associated with depression. Emotional suppression mediated the relationship between SBW and depression. Spiritual-centred coping was a moderator of the mediation i.e., higher use of spiritual-centred coping lessened the indirect effect from SBW-endorsement to depression. Collective coping did not have this effect.	9

Authors (year), *Country*	Sample characteristics	Study characteristics	Exposure measurement	Outcome measurement		Statistical methods	Main findings in relation to review	Quality Rating (NOS Score)
	N (Mean Participant Age in Years)	Study design (Recruitment setting)	SBW measure (*subscale*, [number of items])	Depressive symptoms (subscale, [number of items])	Other relevant outcome(s)	Analyses (Confounders adjusted)		
Erving et al., (2024), *USA*	390 (37.54)	Cross-sectional, survey (National database sample from Mechanisms Underlying the impact of Stress and Emotions MUSE on African-American Woman's Health Study)	Giscombé Superwoman Schema Questionnaire (G-SWS-Q; Woods-Giscombé et al., 2019), (*obligation to present an image of strength* [6], *obligation to help others* [9], *intense motivation to succeed* [6], *resistance to being vulnerable* [7], *obligation to suppress emotions* [7])	Beck Depression Inventory (BDI; Beck et al., 1961, 1988), [21]	Socioeconomic status assessed with four measures*:* *annual household income, educational attainment, homeownership, net worth*. Financial strain assessed with three measures: *can't make ends meet* [2], *financial adjustments* [12 *,* *negative financial life events* [14])	Ordinary least squares regression, moderation (Employment, marital status, parental status)	Endorsement of emotion suppression and obligation to help dimensions of SBW associated with increased depressive symptoms. Obligation to help others had largest magnitude of association, even after adjusting for key demographic factors. Endorsement of motivation to succeed dimension of SBW associated with decreased depressive symptoms when demographic factors adjusted. Net worth moderates association between emotion suppression and obligation to help others, and depressive symptoms, whereby highest level of distress for women reporting negative net worth and highest levels of SBW-endorsement. Association between emotion suppression, resistance to vulnerability and obligation to help others, and depressive symptoms moderated by financial strain, whereby association is strongest for those who report high financial strain.	9
Hall (2017), *USA*	2,276 (African American. Caribbean Black and White women) (42.89)	Cross-sectional, survey (National representative sample – National Survey of American Life)	SBW measure from items already collected in national dataset that corresponded to SBW construct (*strength* [16], *ethnic/ racial pride* [16], *everywoman* [14], *religion/ spirituality* [3], *suppression of emotions* [3]).	Center for Epidemiologic Studies Depression Scale (CES-D 20; Radloff, 1977), [12 item version]	The World Mental Health (WMH) Survey Initiative version of the World Health Organization (WHO) Composite International Diagnostic Interview (CIDI; Kessler & Üstün, 2004)	Multivariate latent class analysis (Age, Socioeconomic status, marital status, parental status, immigration status, race/ ethnicity)	African American and Caribbean Black women were more likely to endorse SBW schema than White women. There were no direct associations between being African American and endorsing the SBW schema. Women who endorsed the SBW schema were more likely to report increased depressive symptoms. There was no association between endorsing SBW schema and 30-day endorsement of depressive symptoms.	8
Henry et al., (2024), *USA*	91 (30.43)	Cross-sectional, survey (Community stillbirth support organisation, social media)	Two subscales from the Stereotypic Roles of Black Women Scale (SRBWS; A. J. Thomas et al., 2004), (*Superwoman* [11], *Mammy* [5])	PROMIS Short Form v1.0 – Depression 8a (PROMIS, 2019), [8]	Life Stressors Checklist-Revised (LSC-R; Wolfe et al., 1996), *12 of 30 events used*	Stepwise entry multiple linear regression (Age, other traumatic life events)	SBW associated with increased psychological distress including specifically depression, after controlling for age and other traumatic life events.	7

Authors (year), *Country*	Sample characteristics	Study characteristics	Exposure measurement	Outcome measurement		Statistical methods	Main findings in relation to review	Quality Rating (NOS Score)
	N (Mean Participant Age in Years)	Study design (Recruitment setting)	SBW measure (*subscale*, [number of items])	Depressive symptoms (subscale, [number of items])	Other relevant outcome(s)	Analyses (Confounders adjusted)		
Jones et al., (2021), *USA*	240 (22.0)	Cross-sectional, survey (Community)	Two subscales from the Stereotypic Roles of Black Women Scale (SRBWS; A. J. Thomas et al., 2004), (*Superwoman* [11], *Mammy* [5])	The Multiculturally Sensitive Mental Health Scale-Depression subscale (MSMHS; Chao & Green, 2011), [9]	Brief – Coping Orientation to Problems Experienced Inventory (Brief-COPE Carver, 1997), (*spirituality* [6], *social support* [6], *problem-oriented/engagement* [6], *disengagement coping* [10])	Correlation, regression, mediation (None identified in bivariate correlations)	SBW schema endorsement was positively associated with depressive symptoms. Social support coping did not mediate this relationship. However, disengagement coping partially mediated this relationship, whereby greater endorsement of SBW was not only associated with more depressive symptoms, but contributed to greater depressive symptoms through disengagement coping.	7
Knighton et al., (2022), *USA*	227 (39.49)	Cross-sectional, survey (Community, social media)	Modified scale from the Stereotypic Roles of Black Women Scale (SRBWS; A. J. Thomas et al., 2004), (*Obligation to show strength/ suppress emotion* [10]), scale was modified based on Superwoman Schema conceptual framework (Woods-Giscombé, 2010)	Combined Patient Health Questionnaire 8-item (PHQ-8; Kroenke et al., 2001) and Generalised Anxiety Disorder 7-item (GAD-7; Spitzer et al., 2006)	Inventory of Microaggressions Against Black Individuals (IMABI; Mercer et al., 2011), [14]	Regression, mediation (Age)	SBW-endorsement associated with increased psychological distress (combined anxious and depressed symptomatology) and mediated the association between racial microaggressions and psychological distress.	7
Leath et al., (2022), *USA*	447 (26)	Cross-sectional, survey (Community, survey panel)	Giscombé Superwoman Schema Questionnaire (G-SWS-Q; Woods-Giscombé et al., 2019), (*obligation to present an image of strength* [6], *obligation to help others* [9], *intense motivation to succeed* [6], *resistance to being vulnerable* [7], *obligation to suppress emotions* [7])	One subscale from the Depression Anxiety Stress Scale (DASS-21; Lovibond & Lovibond, 1995), (*depression,* [7])	Depression Anxiety Stress Scale (DASS-21; Lovibond & Lovibond, 1995), (*anxiety* [7], *stress* [7])	Correlation, regression (None)	All dimensions of SBW-endorsement were associated with depressive symptoms in correlations. Regression revealed that the intense motivation to succeed, resistance to being vulnerable and obligation to suppress emotion dimensions of SBW were directly associated with depressive symptoms. SBW did not moderate the relationship between ACEs and depression.	6

Authors (year), *Country*	Sample characteristics	Study characteristics	Exposure measurement	Outcome measurement		Statistical methods	Main findings in relation to review	Quality Rating (NOS Score)
	N (Mean Participant Age in Years)	Study design (Recruitment setting)	SBW measure (*subscale*, [number of items])	Depressive symptoms (subscale, [number of items])	Other relevant outcome(s)	Analyses (Confounders adjusted)		
Liao et al., (2020), *USA*	222 (28.5)	Cross-sectional, survey (University students)	Two subscales from the Stereotypic Roles of Black Women Scale (SRBWS; A. J. Thomas et al., 2004), (*Superwoman* [11], *Mammy* [5])	One subscale from the Depression Anxiety Stress Scale (DASS-21; Lovibond & Lovibond, 1995), (*depression,* [7])	Discrepancy subscale from the Almost Perfect Scale–Revised (APS-R; Slaney et al., 2001), [12] Self-Compassion Scale–Short Form (SCS-SF; Raes et al., 2011), [12]	Structural Equation Modelling (SEM) (Age, family income, level of education)	SBW measured by Superwoman and Mammy. Direct effect between SBW schema and depression was significant. This suggests that when African American women internalise the SBW schema, they are likely to be vulnerable to poor mental health. Maladaptive perfectionism mediated the association between SBW-endorsement and depression. Self-compassion mediated the association between SBW-endorsement and depression. Collective coping and spiritual coping did not mediate this association.	8
Nelson et al., (2024), *USA*	271 (33.92)	Cross-sectional, survey (Community, general population)	Giscombé Superwoman Schema Questionnaire (G-SWS-Q; Woods-Giscombé et al., 2019), (*obligation to present an image of strength* [6], *obligation to help others* [9], *intense motivation to succeed* [6], *resistance to being vulnerable* [7], *obligation to suppress emotions* [7])	Center for Epidemiologic Studies Depression Scale Revised (CESD-R; Eaton et al., 2004), [20]	–	Path analysis (Education, income, sexual orientation, mental health treatment)	Emotional suppression and an obligation to help others were directly associated with depression. Emotional suppression, resistance to vulnerability, and an obligation to help others were indirectly associated with depression through social isolation.	9
Offutt (2013), *USA*	66 (unreported)	Cross-sectional, survey (local church)	Strong Black Women Cultural Construct Scale (Hamin, 2008), [22], (*affect regulation* [7], *caretaking* [8], *self-reliance* [7])	Center for Epidemiologic Studies Depression Scale (CES-D 20; Radloff, 1977), [20]	–	Pearson's correlation (None)	No significant correlation between depressive symptoms and SBW-endorsement or subscales.	3

Authors (year), *Country*	Sample characteristics	Study characteristics	Exposure measurement	Outcome measurement		Statistical methods	Main findings in relation to review	Quality Rating (NOS Score)
	N (Mean Participant Age in Years)	Study design (Recruitment setting)	SBW measure (*subscale*, [number of items])	Depressive symptoms (subscale, [number of items])	Other relevant outcome(s)	Analyses (Confounders adjusted)		
Perez et al., (2023), *USA*	208 (41.72)	Cross-sectional, survey (Regional study dataset)	Giscombé Superwoman Schema Questionnaire (G-SWS-Q; Woods-Giscombé et al., 2019), (*obligation to present an image of strength* [6], *obligation to help others* [9], *intense motivation to succeed* [6], *resistance to being vulnerable* [7], *obligation to suppress emotions* [7])	Kessler-6 (K6; Kessler et al., 2003), [6]	–	Multiple regression (Age, education, household income, household size, taking cardiovascular medication)	Endorsement of two SBW dimensions (emotion suppression and obligation to help others) were associated with reduced psychological distress. This is in contrast to most other studies that show emotion suppression is associated with increased distress. Measure of psychological distress included both depressive and anxious symptoms.	9
Stanton et al., (2017), *USA*	412 (24.25)	Cross-sectional, survey (University students, crowdsourcing site)	One subscale of the Strong Black Woman Scale (K. Thomas, 2006), (*embodiment* [9])	Center for Epidemiologic Studies Depression Scale (CES-D 20; Radloff, 1977), [20]	-	Correlation, regression (Sample recruitment group, age, Socioeconomic status)	Significant direct effect of SBW-endorsement on symptoms of depression, whereby women endorsing the SBW ideal reported more symptoms of depression.	9
Watson and Hunter (2015), *USA*	95 (20.91)	Cross-sectional, survey (University students, rural community)	Two subscales from the Stereotypic Roles of Black Women Scale (SRBWS; A. J. Thomas et al., 2004), (*Superwoman* [11], *Mammy* [5])	One subscale of the Mood and Anxiety Symptom Questionnaire (MASQ; D. Watson et al., 1995), (*anhedonic depression* [22])	Inventory of Attitudes Toward Seeking Mental Health Services (IASMHS; Mackenzie et al., 2004), [24]	Hierarchical regression (Age, annual income, education)	SBW schema, as measured by Superwoman and Mammy, is significantly positively associated with symptoms of depression. Dimensions of help-seeking did not moderate the relationship between the SBW schema and depression.	8

Authors (year), *Country*	Sample characteristics	Study characteristics	Exposure measurement	Outcome measurement		Statistical methods	Main findings in relation to review	Quality Rating (NOS Score)
	N (Mean Participant Age in Years)	Study design (Recruitment setting)	SBW measure (*subscale*, [number of items])	Depressive symptoms (subscale, [number of items])	Other relevant outcome(s)	Analyses (Confounders adjusted)		
Woods (2013), *USA*	191 (23.6)	Cross-sectional, survey (University students, social media, psychology students)	Strong Black Woman Archetype Scale (SBWAS; Woods, 2013), (*mask of strength/emotional invulnerability* [14], *self-reliance and strength* [11], *caretaking/self-sacrifice* [11])	Center for Epidemiologic Studies Depression Scale (CES-D 20; Radloff, 1977), [20]	-	Partial correlation, multiple mediation (Sample recruitment group, negative affect)	Endorsement of SBW archetype was significantly related to symptoms of depression. Different domains of SBW had different associations with depression. The Mask of Strength had the strongest relationship, followed by care-taking and overall endorsement of SBW. Self-Reliance domain of SBW was unrelated to depressive symptoms.	8
Woods-Giscombé et al., (2019), *USA*	130 (41.19)	Cross-sectional, survey, psychometric validation of scale (Community, general population, survey panel)	Giscombé Superwoman Schema Questionnaire (G-SWS-Q; Woods-Giscombé et al., 2019), (*obligation to present an image of strength* [6], *obligation to help others* [9], *intense motivation to succeed* [6], *resistance to being vulnerable* [7], *obligation to suppress emotions* [7])	Center for Epidemiologic Studies Depression Scale (CES-D 10; Andresen et al., 1994), [10]	-	Correlation (None identified)	SBW-endorsement and all subscales were positively and significantly correlated with depressive symptoms.	7

Measurement of the Strong Black Woman Stereotype

Measurement of the SBW stereotype was conducted using a variety of self-report measures (see Table 1 for all measures used). Although all measures related to the cultural concept of the SBW, they differed in how they operationalised (define a concept or variable in measurable terms) SBW. Some measures operationalised the SBW concept as a multidimensional measure to investigate how different dimensions of the concept related to depressive symptoms. Other measures examined the SBW stereotype as a unidimensional construct, focusing on its overall effect rather than exploring its individual dimensions. There was a trend for more recent studies (in the last 5 years) to utilise multidimensional measures, capturing a wider range of SBW dimensions, than older studies.

Together, the modified Stereotypic Roles of Black Women Scale (SRBWS; A. J. Thomas et al., 2004) and the Giscombé Superwoman Schema Questionnaire (G-SWS-Q; Woods-Giscombé et al., 2019) were the most widely used (appearing in 10 out of 18 studies). Both measures have been shown to be psychometrically sound in various populations of Black women. Whilst both measures are multidimensional, the SRBWS assesses a more limited spread of the SBW stereotype dimensions (i.e., strength, self-reliance, caretaking, and selflessness) by combining two measures of other Black female stereotypes (Superwoman and Mammy schema). Furthermore, this measure was utilised only as a unidimensional measure in the studies that used it. On the other hand, the G-SWS-Q is a recently developed multidimensional measure that covers a wider range of SBW characteristics (‘obligation to present an image of strength’, ‘obligation to help others’, ‘intense motivation to succeed’, ‘resistance to being vulnerable’, ‘obligation to suppress emotions’). Across studies, all dimensions of this measure were explored in relation to their association to depression. As such, studies employing multidimensional measures reported some significant association with depressive symptoms across these dimensions (Erving et al., 2024; Leath et al., 2022;

Nelson et al., 2024; Perez et al., 2023; Woods, 2013; Woods-Giscombé et al., 2019). One study using a multidimensional measure did not find any associations (Offutt, 2013); however, this was a poor quality study (NOS = 3) that used a measure of SBW with 'poor to adequate' reliability (Hamin, 2008), and used a non-representative sample exclusively from a religious setting. Similarly, the only other study to find no associations between SBW-endorsement and depression used another unidimensional measure of the SBW stereotype that only captured strength and self-reliance dimensions (Donovan & West, 2015).

Of note, Hall (2017) conducted a study on a large sample of women from the National Survey of American Life that included both Black and White women. This sample was used to create a measure of the SBW stereotype based on available survey questions that most closely corresponded to the SBW construct. Although Black women were more likely to endorse the construct compared to White women, the measure was not significantly associated with Black women compared to White women in the sample. As such, this measure, although multidimensional in nature, had poor face validity i.e., it did not appear to measure the SBW construct as intended.

Measurement of Depressive Symptomatology

There were also a range of measures used to capture depressive symptomatology. The Center for Epidemiologic Studies Depression Scale (CES-D 10; Andresen et al., 1994; CESD-R Eaton et al., 2004; CES-D 20; Radloff, 1977) was most frequently used (7 out of 18 studies), followed by the Depression Anxiety Stress Scale (DASS-21; Lovibond & Lovibond, 1995) in 5 out of 18 studies. Although there were a range (eight in total) of measures utilised across studies, most measures isolated depression/ depressive symptoms specifically as opposed to a general measure of mental wellbeing. Two studies used more general measures of psychological distress that incorporated depressive symptomatology (Knighton et al., 2022; Perez et al., 2023).

There was evidence that all measures used to capture depressive symptomatology were valid and reliable, and many were well established measures regularly employed in the social sciences literature. Across 15 of the studies, five measures are also evidenced to have been normed in Black populations i.e., standardised within this population (Castelin & White, 2022; Donovan & West, 2015; Drakeford, 2017; Jones et al., 2021; Knighton et al., 2022; Leath et al., 2022; Liao et al., 2020; Nelson et al., 2024; Offutt, 2013; Stanton et al., 2017; N. N. Watson & Hunter, 2015; Woods, 2013; Woods-Giscombé et al., 2019). This included two studies that did not show any association between SBW-endorsement and depressive symptoms. One study used a culturally specific measure of depression (Multiculturally Sensitive Mental Health Scale) that was exclusively developed and validated in a Black population (Jones et al., 2021).

The Association Between the Strong Black Woman Stereotype and Depression

Sixteen of the 18 studies presented in this review provided evidence of a direct association between endorsement of the SBW stereotype and depressive symptoms in populations of Black women (Abrams et al., 2019; Castelin & White, 2022; Drakeford, 2017; Erving et al., 2024; Hall, 2017; Henry et al., 2024; Jones et al., 2021; Knighton et al., 2022; Leath et al., 2022; Liao et al., 2020; Perez et al., 2023; Stanton et al., 2017; N. N. Watson & Hunter, 2015; Woods, 2013; Woods-Giscombé et al., 2019). All studies found that endorsement of the SBW stereotype was associated with increased depressive symptomatology in Black women. For example, Liao et al., (2020) used structural equation modelling (SEM), a statistical technique used to analyse complex relationships between observed and unobserved variables, to reveal a direct effect between endorsement of the SBW stereotype and depressive symptoms in a sample of 222 Black women. Whilst this effect was described in a population of Black women that exclusively included university students, similar effects were found in studies using more representative samples, for example, a nationally and regionally representative samples of Black women (Erving et al., 2024; Perez et al., 2023) and community-recruited samples. The implication of these results is that when self-identifying Black women endorse (or internalise) the SBW stereotype they are more likely to be vulnerable to experiencing depressive symptoms.

One study found mixed results regarding the direct association with depression. Hall (2017) measured both depressive symptoms and 30-day endorsement of depressive symptoms using the World Mental Health Organization Composite International Diagnostic Interview (CIDI; Pennell et al., 2004). The CIDI is a standardised diagnostic measure for diagnosing mental disorders across different cultures and languages, including a measure for depression. Those scoring above threshold would meet the criteria for a diagnosis of depression. Whilst there was no direct relationship between SBW-endorsement and depressive symptoms, there was a direct association between belonging to the SBW-endorsement group and meeting the clinical criteria for depression in the last 30 days.

The author's conclusion suggests that given the intended objective nature of the CIDI and the more subjective nature of the CES-D, women who embrace the SBW stereotype are objectively more prone to depression. However, their subjective experiences of depression may not be fully captured by the CES-D. This was a good quality study (NOS = 8) as it was an epidemiological study using a large (*N* = 2,276) nationally representative dataset. The study also controlled for a range of confounders, including age, socioeconomic status, and immigration status. However, this study had key limitations that affect its generalisability. Firstly, the measure for SBW-endorsement did not demonstrate face validity as being African American was not significantly associated with endorsing the measure compared to being White. Secondly, this was an unpublished PhD thesis that had not been peer-reviewed by experts in the field.

Two studies did not report a direct relationship between the SBW stereotype and depressive symptoms (Donovan & West, 2015; Offutt, 2013); however, these studies were the lowest in quality, scoring 5 and 3 respectively. Although both studies did not differ from the other 16 studies in the types of depression symptomatology measures used, it is noted that the study by Donovan and West (2015) used a unidimensional measure of the SBW stereotype (the Superwoman subscale of the SRBWS) that had been adapted specifically for the study. Other studies utilising this same measure did not adapt the scale. It may be that adaptation of the scale affected the validity or reliability of the scale in the sample. Additionally, Offutt (2013) did not use a validated measure of SBW-endorsement and conducted less rigorous analyses. Offutt (2013) had an adequate sample size to use more robust analyses such as regression, but used a simpler method (Pearson's correlation) to investigate the association between SBW-endorsement and depressive symptoms. Both studies also used highly unrepresentative samples, as they recruited exclusively in student and local church settings.

Indirect Effect of the Strong Black Woman Stereotype

The SBW stereotype may impact depressive symptomatology directly but could also operate indirectly through intermediary variables. Several studies included measures of other relevant psychological factors that are implicated in the function of the SBW stereotype. These factors included self-silencing, coping, externalised self-perception, emotion suppression, social isolation, self-compassion, and maladaptive perfectionism (Abrams et al., 2019; Drakeford, 2017; Jones et al., 2021; Liao et al., 2020; Nelson et al., 2024). For example, Black women endorsing factors associated with the SBW stereotype were shown to be more likely to have feelings of loneliness and isolation, which in turn meant they were more likely to experience symptoms of depression (Nelson et al., 2024). Additionally, Abrams et al., (2019) investigated self-silencing (a form of avoidant coping characterised by restricting expression to maintain relationships and avoid conflict) and externalised-self perceptions (the extent to which individuals assess themselves based on sociocultural gendered expectations and standards) as mediators of the association between SBW-endorsement and depressive symptoms. Results revealed that greater SBW-endorsement was associated with more depressive symptoms and this relationship was explained by self-silencing i.e., when Black women feel a greater sense of duty to exhibit strength, they are more likely to silence themselves, which is then more likely to lead to experiences of depressive symptoms. This same result was shown with externalised-self perceptions, whereby the pressure to exude strength in-keeping with the SBW stereotype manifests in depressive symptoms through externalised self-perceptions.

Emotion suppression (the conscious effort of inhibiting emotional arousal) is a related construct to self-silencing. Emotion suppression was also indicated as a key factor in the function of the SBW stereotype in a study by Drakeford (2017). Emotion suppression can be considered a coping mechanism to stress and was found to mediate the relationship between SBW-endorsement and depressive symptoms in this high-quality study (NOS = 9). Additional evidence of the importance of suppression came from Hall (2017). Whilst emotion suppression was not investigated as a variable in this study, the author did find that SBW-endorsement did not directly link with being African American without the inclusion of mental health outcomes, including depressive symptomatology. The author concluded that this suggests the presence of a suppression effect where SBW-endorsement is more important in the context of the health outcomes that Black women, and particularly African American women, face. Coping was further explored in complex serial mediation analyses by Liao et al., (2020) where several coping styles (collective coping, spiritual coping, and self-compassion) were tested against the association between stereotype endorsement and depressive symptoms. Maladaptive perfectionism and self-compassion mediated this relationship, with self-compassion as the more significant mediator.

Many of these factors may be important mechanisms by which the SBW stereotype affects the experience of depression in Black women, particularly in the coping mechanisms employed by Black women.

Multidimensional Effects of the Strong Black Woman Stereotype

Whilst endorsement of the composite SBW stereotype was consistently associated with increased depressive symptomatology in Black women across studies, such investigations fail to capture the multidimensionality of the SBW stereotype. Seven out of 18 studies revealed a more complex relationship between SBW-endorsement and depressive symptoms by investigating dimensions of the stereotype alongside the composite concept (Erving et al., 2024; Leath et al., 2022; Nelson et al., 2024; Offutt, 2013; Perez et al., 2023; Woods, 2013; Woods-Giscombé et al., 2019). The majority of these studies (5 out of 7) used the G-SWS-Q (Erving et al., 2024; Leath et al., 2022; Nelson et al., 2024; Perez et al., 2023; Woods-Giscombé et al., 2019), which is a validated multidimensional measure of SBW-endorsement. This measure was developed from a theoretically grounded series of studies using a multi-pronged methodological strategy involving several focus groups and survey data (Woods-Giscombé et al., 2019). It has shown to be psychometrically valid and reliable in populations of Black women, including in construct validity (the degree to which a measure accurately reflects the theoretical concept it is intended to assess) and test-retest reliability (the consistency of a measure or test over time). As such, findings from studies using this measure may more accurately represent the multidimensional nature of the SBW stereotype. Additionally, these five studies had high NOS ratings, ranging from 6 to 9, indicating good quality studies.

Across studies, the same SBW stereotype dimensions related to the experience of depressive symptoms in Black women in different ways. For example, dimensions such as ‘an obligation to present an image of strength’ and ‘intense motivation to succeed’ were not associated with depressive symptoms in one study that considered all five dimensions of the SBW (Nelson et al., 2024). Whilst this was mirrored in multidimensional studies (e.g., Leath et al., 2022), this is in contrast to studies using unidimensional measures focused on strength and self-reliance components which consistently showed negative direct links to depressive symptoms (e.g., Abrams et al., 2019; Donovan & West, 2015; Stanton et al., 2017). Studies making use of multidimensional measures may be important to the understanding of the complex picture of SBW that is presented.

Studies here further highlighted the significance of emotion suppression as a dimension of the SBW stereotype associated with negative outcomes. For example, Erving et al., (2024) found that emotion suppression and ‘obligation to help others’ was associated with increased depressive symptoms even after adjusting for key demographic factors such as marital status and parental status. Furthermore, this study investigated the moderating effect (the influence that a third variable, known as a moderator, has on the relationship between two other variables) of multidimensional measures of SES that captured a more nuanced understanding of SES related to net worth and financial strain. Women reporting a negative net worth who strongly endorsed ‘emotion suppression’ and ‘obligation to help others’ had the highest average depressive symptom scores. The authors noted the significant of these findings, as it was conducted in an economically diverse sample of Black women where nearly 3 in 10 women reported having a negative net worth. This study adds much needed context to the environmental contexts in which SBW-endorsement may work differentially to impact wellbeing.

Several dimensions of the SBW stereotype were shown to be indirectly associated with increased depressive symptoms through social isolation (Nelson et al., 2024), whereby women adhering more strictly to the SBW stereotype were more likely to experience isolation, which was associated with depressive symptoms. These dimensions included ‘emotional suppression’, ‘resistance to vulnerability’, and an ‘obligation to help others’, which are particularly relevant to an individual’s experience of social and emotional support networks, and isolation (compared to ‘obligation to present an image of strength’ and ‘intense motivation to succeed’). This study was strong as these results held after controlling for key social support paradigms such as income and mental health treatment. Related to this, there was a consistent lack of evidence across two well-powered studies that collective-styles of coping mediated the association between SBW-endorsement and depressive symptoms (Drakeford, 2017; Liao et al., 2020), where it would be theorised to be protective in the context of SBW-endorsement that increases depressive symptoms associated with social isolation.

Whilst five studies provided evidence for the detrimental direct and indirect effect of emotion suppression (Drakeford, 2017; Erving et al., 2024; Leath et al., 2022; Nelson et al., 2024; Woods-Giscombé et al., 2019), in contrast one study by Perez et al., (2023) found that ‘obligation to help others’ and ‘obligation to suppress emotions’ were associated with lower psychological distress, suggesting that aspects of the SBW stereotype may be protective of mental wellbeing. However, whilst the study by Perez et al., (2023) was a good quality study (NOS = 9), they used a measure for psychological distress that combined both anxious and depressive symptoms. In contrast, all other studies finding a negative association used a measure that captured solely depressive symptoms. This could be the reason for differences found as it may be that emotion suppression is more protective for anxious symptoms and detrimental for depressive symptoms.

Moderating Effects

The studies presented here indicate that experiences with the SBW stereotype are not uniform across the population of Black women. Two studies investigated SBW-endorsement as a moderator on the relationship between other key outcomes and symptoms of depression (Donovan & West, 2015; Leath et al., 2022). Moderation analyses may reveal how SBW-endorsement interacts with other factors to create groups of women endorsing differing levels of the SBW stereotype, with different experiences of associated depressive symptomatology for each group. For example, Donovan and West (2015) investigated depressive symptoms in Black women and discovered that moderate-to-high levels of SBW-endorsement magnified the correlation between stress and depressive symptoms, while low levels of stereotype endorsement did not. These results indicated that women in both the high and moderate levels of SBW stereotype endorsement groups reported the highest level of depressive symptoms; whereas women characterised by comparatively low levels of SBW-endorsement did not. Significantly, this moderating effect was found in the absence of direct effects between SBW-endorsement and depression, which indicates that SBW-endorsement acts independently of other forms of stress when considered together. However, caution of this finding is warranted as this was a poor-quality study that may have been under-powered, as a relatively small sample size (*N* = 92) was used to investigate moderation effects. Furthermore, in cross-sectional analysis, it is not possible to determine the direction between associations – which may imply causality. Therefore, alternative moderation pathways, aside from those proposed here, are also plausible.

Finally, another study investigating SBW stereotype as a moderator was more adequately powered (*N* = 447) and did not reveal any moderating effect of SBW-endorsement on the relationship between Adverse Childhood Experiences (ACEs) and symptoms of depression in Black women (Leath et al., 2022). An increased number of ACEs are likely related to an increased number of stressors in an individual’s life. Whilst these studies deepen the understanding of how SBW-endorsement may interact with an individual’s environment to impact the experience of depression, the interaction effects of the SBW stereotype are currently unclear based on the studies presented here.

Discussion

The SBW stereotype portrays Black women as resilient, hesitant to display weakness or vulnerability, consistently self-reliant, prioritising service to others, and demonstrating strength (Beauboeuf-Lafontant, 2007; Woods-Giscombé, 2010). Whilst stereotypes are largely thought to have a detrimental effect on wellbeing due to their often discriminatory nature (Paradies et al., 2015; D. R. Williams & Mohammed, 2009), the effects of the SBW stereotype are thought to be complex due to its origins in response to entrenched negative stereotypes stemming from slavery and segregation (Nelson et al., 2016; Davis & Afifi, 2019). To elucidate the mechanisms by which this stereotype affects the health and wellbeing of Black women, the author reviewed empirical studies published on the subject. The review covered 18 studies meeting selection criteria and investigating the SBW stereotype in the experience of depressive symptoms in Black women. This review confirms extant wider research on the negative impact of discrimination on mental health. Specifically, as the SBW stereotype is an example of multiple discrimination, this review contributes to the understanding of the effect of social determinants of health on mental health.

Overall, this review provided preliminary evidence a negative association between the SBW stereotype and depressive symptoms in Black women. Most studies reviewed confirmed a direct association using large scale studies that controlled for various other social determinants of health, such as age and SES. While a few studies did not report a direct relationship, such studies were generally of lower quality. For example, these studies tended to have been conducted in less representative samples of Black women, making them less generalisable. Additionally, an important factor in confirming this negative association was the need to have an accurate way of operationalising the SBW stereotype. All studies that confirmed this negative association utilised valid measures of SBW-endorsement, whilst the studies that did not find an association used unvalidated measures of SBW, alongside less vigorous analysis methods.

Despite this evidence of the negative association between SBW-endorsement and depressive symptomatology, this review also revealed some positive effects of SBW-endorsement. For example, Perez et al., (2023) found that certain aspects of SBW-endorsement (feeling obligated to help others and suppressing emotions) were protective towards mental health as they were associated with lower psychological distress, where other dimensions were associated with higher distress. Whilst this was a unique finding in this review, it draws attention to the theoretical underpinnings of the SBW concept that position it as a “double-edged sword” for Black women. Extant research considers that the SBW acts as a coping mechanism to enable Black women to endure through racial-gendered stressors, but also increases susceptibility to negative mental health outcomes (Allen et al., 2019; Woods-Giscombé, 2010; Woods-Giscombé et al., 2019). Studies that regarded the Strong Black Woman (SBW) stereotype as a multidimensional concept were vital for elucidating its dual nature, as evidenced by the mixed results observed. While some studies highlighted the importance of certain dimensions related to emotion suppression (e.g., Erving et al., 2024), other dimensions of the stereotype were found to be unrelated to depressive symptoms, for example, ‘intense motivation to succeed’ (Nelson et al., 2024). These findings exemplify the multidimensional nature of the SBW stereotype. It is possible that while endorsing the SBW stereotype places psychological pressure on Black women, not all aspects of the stereotype contribute equally to its impact on mental health. However, the heterogeneity evident in study designs and findings highlights the need for additional research to clarify the mechanisms underlying the association with mental health.

Strengths and Limitations

This review offers notable strengths. Firstly, by systematically searching multiple databases and employing rigorous inclusion criteria, selection bias could be minimised, ensuring the comprehensiveness of the findings. This was especially evident through the literature search that enabled all relevant studies to be identified. As there was not a focus on peer-reviewed literature, this meant that grey literature could be considered. Additionally, the lack of constraints regarding publication time or type broadened the scope and reduced potential publication bias. Furthermore, the range of studies included in this review were largely of good quality according to the standards of a widely recognised multidisciplinary quality assessment tool (NOS; Wells et al., 2024). Related to this, while inconsistencies in the way SBW and depression were measured across the studies introduced complexity when comparing findings, most studies used validated tools. This lends credence to the conclusions drawn from the systematic review.

Overall, while the review possesses notable strengths in its transparent methodology, comprehensive literature search, and consideration of diverse sources, several limitations should be acknowledged. Firstly, it is essential to consider the inherent constraints of observational cross-sectional studies. Whilst cross-sectional data is useful to reveal relationships between variables of interest, such evidence can only be used to determine that the SBW stereotype is more likely to be associated with an increase in the experience of depressive symptoms. It is not possible to determine that the SBW stereotype causes depressive symptoms, nor the direction of this relationship. It could be that the inverse is true, and the experience of depressive symptoms in the populations of Black women reviewed here leads to increased endorsement of the SBW stereotype. While the quality assessment of observational studies highlighted predictive weaknesses associated with this methodology, the present review offers a narrative synthesis that aims primarily to critically evaluate the trends in the literature.

Implications for Future Research

As confirmed in this systematic review, the extant literature supports a largely negative impact of SBW-endorsement on the experience of depressive symptoms in Black women. Despite this, the review highlights both positive and adverse effects of the SBW stereotype, including differential impact of the dimensions that make up the stereotype. Importantly, the use of multidimensional measures of SBW-endorsement that better delineated adaptive and maladaptive components of the stereotype were key to this. The author suggests continued use of multidimensional scales such as the G-SWS-Q (Woods-Giscombé et al., 2019).

The measurement of depressive symptoms should be considered carefully in future research. While validated measures of depressive symptomatology were used across the reviewed studies, few provided evidence that these measures were culturally sensitive. Only one study used a culturally specific measure of depression (Multiculturally Sensitive Mental Health Scale) that was exclusively developed and validated in a Black population (Jones et al., 2021). Population-based studies indicate that depression is underdiagnosed in African Caribbean populations compared to the White British population, especially for women (Berthoud & Nazroo, 1997; Shaw et al., 1999). It is proposed that depression may be expressed differently based on sociocultural factors such as gender and race, which would contribute to this finding. Therefore, measures of depression that have adequate sensitivity to detect cultural differences in the expression of depressive symptoms are crucial when considering the impact of social stressors such as the SBW stereotype.

While this systematic review provides valuable insights into the association between the SBW stereotype and depression in Black women, the need for longitudinal designs in future research is evident. Longitudinal studies provide a unique opportunity to explore the dynamic interplay between SBW-endorsement, CMD, and potential mediators or moderators over time. By capturing data at multiple time points, longitudinal designs may help clarify temporal relationships, identify potential causal pathways, and offer a more nuanced understanding of how the SBW stereotype affects mental health trajectories in Black women. This would also improve the predictive power of studies in this area. Furthermore, longitudinal research allows for the exploration of resilience factors or protective mechanisms that may mitigate the adverse effects of stereotype endorsement on mental wellbeing. Therefore, incorporating longitudinal designs into future investigations is essential for advancing our understanding of this complex phenomenon.

Future research should prioritize diversifying the populations studied in relation to the SBW stereotype. All studies presented as part of this review were conducted on populations based in the USA, and largely conducted with student populations. This limits the generalisability of the conclusions regarding the impact on depression and mental health. Repeating findings regarding the negative impact of the SBW stereotype in populations of Black women globally would add validity to the concept of the SBW stereotype. Future researchers may also find it valuable to explore the relationship between sociocultural stereotypes and mental health among women from various racially and ethnically minoritised groups. While the historical roots of the SBW stereotype are deeply tied to the oppressions of the Trans-Atlantic Slave Trade (Davis et al., 2018; Nelson et al., 2016), other racially and ethnically minoritised populations have also encountered distinct historical and cultural narratives of oppression. While the current study did not include women from other groups, such comparisons could yield important insights for future studies.

Clinical Implications

It is vital that clinicians and researchers develop a better understanding of how the SBW stereotype influences Black women's health experiences. However, clinicians should recognise that interpretations of the SBW stereotype vary across social contexts and among individuals, and there may be great diversity in SBW-endorsement among Black women. Rather than pathologising adherence to aspects of the stereotype, clinicians and clients can explore how some dimensions of the SBW stereotype can be both beneficial and problematic. It may be useful to consider adherence to SBW stereotype dimensions in relation to goal setting when working therapeutically with clients.

The findings here extend beyond individualised interventions that may inadvertently pathologise the actions of marginalised communities. Burgeoning psychological literature indicates that stereotypes and biases influence health professionals' clinical judgment and decision-making (Puddifoot, 2019). It is important that healthcare professionals consider the impact of racial-gendered stereotypes both internally on Black women, and externally on their management in healthcare settings. This would involve enhancing access to culturally sensitive therapeutic services. Recent research highlights the need to recognize and address racial trauma as part of therapy, by integrating trauma-informed approaches, and considering cultural aspects in the expression of trauma in systems of care (Chioneso et al., 2020; Comas-Díaz, 2016). Additionally, public education, social policies, and legislation should confront the structures that facilitate discriminatory experiences, addressing economic and social inequalities while promoting positive representations of Black womanhood. For example, culturally responsive supervision for trainee therapists that emphasises cultural awareness and sensitivity to improve future practitioners' skills (Kniffley et al., 2024).

In summary, this systematic review highlights the need for increased attention to the role of the SBW stereotype in shaping mental health outcomes among Black women. While existing evidence suggests a potential association between the SBW stereotype and depressive symptoms, further research is warranted to inform targeted interventions and support strategies aimed at promoting mental wellbeing in this population. Additionally, this area of research can contribute to broader research on discrimination and mental health.

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EXPLORING STEREOTYPING AND HEALTH OUTCOMES IN BLACK WOMEN WITH SICKLE CELL DISEASE

SECTION B: Exploring the Strong Black Woman stereotype among Black women with sickle cell disease: An intersectional perspective on health-related quality of life in a clinical population

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Abstract

Objectives: Individuals with sickle cell disease often report lower health-related quality of life compared to the general population and other chronic illnesses. Research in this area has primarily centred on clinical and demographic factors, overlooking the influence of psychosocial factors such as discrimination. The Strong Black Woman (SBW) stereotype is understood as a gendered-racial construct reflecting intersecting experiences of racism and sexism for Black women. This stereotype idealises Black women as resilient and self-sacrificing in the face of adversity. Although the detrimental effects of this stereotype have been documented in the general population, its effect on wellbeing in clinical populations has yet to be explored.

Design: A sample comprising 48 UK-based women, aged 19-62, with sickle cell disease, completed self-report questionnaires assessing SBW-endorsement, health-related quality of life, clinical indicators of disease severity, and demographic factors. Hierarchical regression analyses were conducted to examine the relative contributions of these factors.

Results: After adjusting for covariates and clinical indicators, SBW-endorsement was significantly negatively associated with the emotional wellbeing, over and above clinical indicators. Contrary to hypotheses, SBW-endorsement did not explain unique variance in physical dimensions of health-related quality of life (pain impact, stiffness impact and fatigue).

Conclusion: Findings indicate that healthcare providers should consider non-clinical factors, such as experiences of discrimination, when addressing health-related quality of life in women with sickle cell disease, especially in relation to mental wellbeing.

Key words: Strong Black Woman Stereotype, Sickle Cell Disease, Health Related Quality of Life, Mental Health, Health Inequalities, Intersectionality Theory

Introduction

Sickle cell disease (SCD) encompasses lifelong, multisystem conditions resulting from inheriting sickle haemoglobin-S (HbS). The inheritance of HbS alters the shape and function of haemoglobin (Hb) molecules, leading red blood cells to adopt a sickle (crescent) shape. The most common and severe type is sickle cell anaemia (HbSS). In the UK, SCD is the most prevalent heritable blood disorder, affecting approximately 1 in 2000 live births in England (National Institute for Health and Care Excellence (NICE), 2021; Streetly et al., 2010), with an estimated 12,500 to 15,000 affected individuals. Sickled blood cells can block small blood vessels, causing acute painful vaso-occlusive crises (VOC) that deprive tissues of oxygen and damage organs. The pain associated with such crises is a significant symptom of SCD, with recurrent episodes throughout life often requiring frequent hospitalizations (Ballas et al., 2012). Understanding mental health in the SCD population is complex because symptoms of depression and anxiety overlap with SCD complications, often leading to undiagnosed psychological difficulties. For example, acute pain crises can cause sleep disturbance and daytime fatigue, which are also common symptoms in depression and anxiety.

In the past 30 years, clinical management of SCD has significantly advanced, leading to improved survival into adulthood (Telfer et al., 2007) and a shift from in-patient to out-patient care (Lucas et al., 2008). Despite these improvements, SCD remains a leading cause of hospital admissions in the UK, with high rates of multiple admissions per patient (AlJuburi et al., 2012; Nathwani, 2011), exacerbated recently by higher COVID-19 hospitalization rates compared to the non-SCD population (Michelon et al., 2023). This gives an indication as to the substantial burden of health management. Concordantly, people with SCD report severely compromised health-related quality of life (HRQoL; including in mental health) compared to the general population (McClish et al., 2005) and those with other chronic diseases

(Panepinto & Bonner, 2012). Additionally, SCD is often racialised, despite varying in prevalence across ethnic groups due to genetic factors linked to regions with high malaria incidence (Rees et al., 2010), rather than due to race itself. SCD is most common in individuals of African ancestry, with lower prevalence in Mediterranean, Middle Eastern, Indian, and Hispanic populations. In the U.S. and UK, it is more prevalent in Black communities. For example, in Hackney, 85% of adults with SCD are of Black ethnicity, with smaller proportions identified as White (4%) and Asian (1%) (City and Hackney Sickle Cell and Thalassaemia Centre, 2018). This racialisation may contribute to disparities in healthcare; therefore, addressing these disparities requires the recognition of the genetic basis of SCD while also confronting the sociocultural and structural factors that contribute to inequitable care.

Although there is currently a dearth of research contributing to our understanding of health outcomes in UK SCD patients, disparities in health outcomes compared to other chronic conditions may be associated with healthcare inequalities. For example, SCD and cystic fibrosis (CF) are comparable genetic conditions with notable differences in the care and treatment each condition receives, particularly in the UK and the US. CF, which predominantly affects people of European ancestry, generally receives 3.5 times more funding and more research attention compared to SCD (Farooq et al., 2020; Lee et al., 2019). This disparity reflects broader racial inequities in healthcare systems. CF treatment has advanced significantly with the development of life-extending therapies, including precision medicine options (Balfour-Lynn & King, 2022). In contrast, although treatments like hydroxyurea and bone marrow transplants exist for SCD, there is often less innovation and access to advanced therapies, despite the high morbidity associated with the condition (Tang & Shan, 2024; Lee et al., 2019). Finally, SCD is often subject to stigmatisation and racial biases, which can affect how patients are treated in healthcare settings. SCD patients report more frequent instances of inadequate pain management, with their pain sometimes being dismissed or under-treated due to racial stereotypes (Bulgin et al., 2018).

A recent report by the all-party parliamentary inquiry on barriers to care highlighted substandard care of SCD patients in hospitals, low awareness of SCD amongst healthcare professionals and frequent reports of discriminatory attitudes towards SCD patients (Sickle Cell Society, 2021). Such barriers are important to our understanding of health and wellbeing, as research suggests that attitudes about disease and illness impact coping behaviours and disease management (Herek et al., 2003; Stangl et al., 2019; Stuart & Arboleda-Flórez, 2001), potentially contributing to poorer health outcomes like that seen in those with SCD. A recent systematic review has confirmed that SCD-related stigma negatively affects both mental and physical health (Bulgin et al., 2018). For example, individuals experiencing higher rates of disease and race-related discrimination in healthcare settings report greater pain severity, pain burden, and interference with daily functioning (Haywood et al., 2014; Mathur et al., 2016; Wakefield et al., 2017).

Health Inequalities and Discrimination

Health inequalities are unjust and preventable differences in health status among populations and within society (E. Williams et al., 2022). Globally, health inequalities are recognised to be underpinned by social determinants of health, which are the range of interacting non-medical factors that shape health and wellbeing. Social inclusion and discrimination are examples of social determinants that have received much attention in health research. Discrimination is believed to impact individuals via two different mechanisms. Discrimination may act directly by disrupting stress responses, which leads to negative health consequences over time (Clark et al., 1999; Nam et al., 2022; Paradies, 2006; Paradies et al., 2015). Discrimination may also act indirectly by influencing varying levels of exposure to health risks and access to resources (Gee & Ford, 2011; Krieger, 2014). This interplay between biological, psychological, and socioenvironmental factors in the understanding of health aligns with the biopsychosocial model.

The use of the biopsychosocial model to understand SCD care has been highlighted (Treadwell et al., 2022), as although biological differences based on SCD type may influence health outcomes (Embury, 1986; Inusa et al., 2019; O. S. Platt et al., 1991; Quinn, 2016; Saraf et al., 2014), depression and anxiety are also significant predictors of pain impact, irrespective of SCD type (Levenson et al., 2008). Additionally, anxiety has been linked to more frequent acute pain episodes (Mahdi et al., 2010). Despite common knowledge that SCD is a highly racilaised condition occurring predominantly in people of African and African-Caribbean origin (NICE, 2021), psychosocial factors pertaining to race and identity are often overlooked in SCD literature (Bediako & Haywood, 2009). It is thought that racism frequently interacts with, and exacerbates, other sources of health-related stigma in SCD, including stigmas surrounding opioid use for pain management (Bulgin et al., 2018). Understanding how cultural stigmas and discrimination affect attitudes towards SCD is vital for understanding its impact on mental and physical health.

Existing research already indicates that discrimination significantly contributes to observed disparities in the health of marginalised groups compared to their White counterparts (D. R. Williams & Mohammed, 2009). For individuals with SCD, the concern lies not only in the connection between SCD and 'race', but also in the implicit link between 'race' and negative perceptions and attitudes which influence their healthcare experiences (Bediako & Moffitt, 2011). Consistent with the biopsychosocial model of health, it may be useful to consider the influence of such negative attitudes on health outcomes in those with SCD. Negative perceptions and attitudes constitute stereotyping, which is understood here as a psychological construct related to attitudes and cognitions that influence sense of self, behaviour and, subsequently, health outcomes. Racial stereotyping could offer insight into psychosocial impacts on health outcomes in SCD. In addition to race, various aspects of identity, including gender, can be subject to negative perceptions and attitudes. In the SCD population, gender may impact health outcomes, with research suggesting differences in clinical outcomes such as worse reports of pain severity in women (Masese et al., 2021) and poorer mental quality of life outcomes in women (Adam et al., 2017). Additionally, although findings vary (Anie et al., 2002; McClish et al., 2006) female gender has been linked to diminished HRQoL in the physical domain (Dampier et al., 2011) and higher prevalence of pain episodes (Taylor et al., 2013).

For Black women, both racism and sexism are independently associated with worse health outcomes, for example, increased psychological distress (Moradi & Subich, 2003). However, examining these factors separately might overlook the distinct experiences at the intersection of race and gender. As such, research increasingly adopts an intersectionality approach to explore how gender, race, and health outcomes intersect. Intersectionality theory, originating from Black feminist thought, suggests that social identities (gender, age, etc.) intersect to create unique group experiences shaped by sociocultural power and privilege (Combahee River Collective, 2017; Crenshaw, 1989, 1991). Within this framework, the concept of the SBW stereotype has been delineated, which is a pervasive stereotype unique to Black women (Beauboeuf-Lafontant, 2003; Settles, 2006; Woods-Giscombé, 2010). Although the SBW stereotype is considered to be a pervasive and influential construct within popular culture and media, exploration of the SBW stereotype's impact on health and wellbeing is relatively recent (Jefferies, 2022; M. D. Thomas et al., 2022).

The Strong Black Woman Stereotype

The SBW stereotype is characterised by strength, emotional suppression, and self-sacrifice (Black & Woods-Giscombé, 2012; Woods-Giscombé, 2010), and developed as a concept in the context of structural barriers such as enslavement and marginalisation across the African diaspora (Collins, 2008). Furthermore, this depiction of Black women as beacons of strength and resilience was, in part, a response to negative controlling images that pushed narratives of dutiful servants, sexual objects, or untamed shrews (A. J. Thomas et al., 2004). The SBW emerged as a way to humanise Black women by bolstering a sense of strength and perseverance (Beauboeuf-Lafontant, 2009). Although the SBW stereotype has its roots within the USA, Black women in the UK and across the African diaspora share the history of enslavement and experiences of racialisation and discrimination. Research exploring UK experiences of the SBW stereotype are preliminary but establish its relevance in the lived experience of Black women in the UK. Qualitative studies have highlighted how Black women in the UK navigate discrimination and distress in ways consistent with the SBW stereotype (Edge & MacKian, 2010; Graham & Clarke, 2021; Pusey, 2021).

Research on the SBW stereotype has mainly focused on its psychological impact, although research is expanding on the physical health impact as well. Empirical findings have demonstrated associations between SBW-endorsement and depression and anxiety (Abrams et al., 2019; Leath et al., 2022; Liao et al., 2020; Nelson et al., 2024), negative attitudes toward help-seeking (Young, 2018), greater levels of psychological distress (Knighton et al., 2022; Watson-Singleton, 2017), and poorer sleep health (McLaurin-Jones et al., 2021). It is thought the mandate of ‘strength at the expense of emotional expression’ may limit health-promoting behaviours (e.g., help-seeking) and self-care (Black & Woods-Giscombé, 2012) in Black women. Recent studies lend support to this proposal, including a recent study that found even awareness of the SBW stereotype predicted negative mental health outcomes, which in turn was associated with diminished healthy behaviours (e.g., greater alcohol consumption) (Jerald et al., 2017). Considering the marked influence of the SBW, it may be a useful concept to consider in relation to disparities in health and wellbeing. In those with SCD, psychological complications have already been reported to be highly prevalent

(Jenerette et al., 2005; Levenson et al., 2008) with reported rates varying between 18-44% (Hasan et al., 2003; Laurence et al., 2006; Levenson, 2008; Wilson Schaeffer et al., 1999). However, no quantitative research to date has examined the association between SBW-endorsement and psychological outcomes in a clinical population such as the SCD population. Together, the biopsychosocial model of health and intersectionality theory provide a structure to consider the influence of SBW-endorsement on health outcomes in clinical populations.

Emotion Suppression

Whilst the majority of research suggests that SBW-endorsement is deleterious to the psychological wellbeing of Black women (L. F. Platt & Fanning, 2023; Woods-Giscombé et al., 2019), overall, theoretical underpinnings frame the stereotype as a paradox. It is thought that specific dimensions of the stereotype are damaging, while others may offer protection to wellbeing. For example, recent research has found that dimensions related to emotion suppression and feeling obligated to help others was actually more likely to be associated with lower levels of psychological distress whilst having an intense motivation to succeed was associated with lower likelihood of hypertension (Perez et al., 2023). Allen et al., (2019) also found that suppressing emotions in the context of SBW-endorsement was associated with lower levels of allostatic load (i.e. less stress) in their bodies. On the other hand, several studies have consistently found evidence for a deleterious effect of emotion suppression and self-silencing on wellbeing in Black women (Abrams et al., 2019; Erving et al., 2024; Leath et al., 2022; Nelson et al., 2024).

These findings are consistent with observed patterns in the wider literature on emotion regulation which shows that suppressing emotions is associated with negative psychological, physiological, physical and social outcomes (Aldao et al., 2010; Butler et al., 2003; Gross & John, 2003; Gross & Thompson, 2007), it may be useful to clarify the role of emotion suppression in a population that reports reduced emotional wellbeing (i.e., Black women, and those with SCD). In a recent qualitative study, emotion suppression was identified as a highly salient dimension in a clinical group of Black women with pre-diabetes (Sheffield-Abdullah & Woods-Giscombé, 2021). As this study is concerned with a clinical population of Black women with SCD, this finding sets a rationale for further exploration of the impact of emotion suppression on wellbeing.

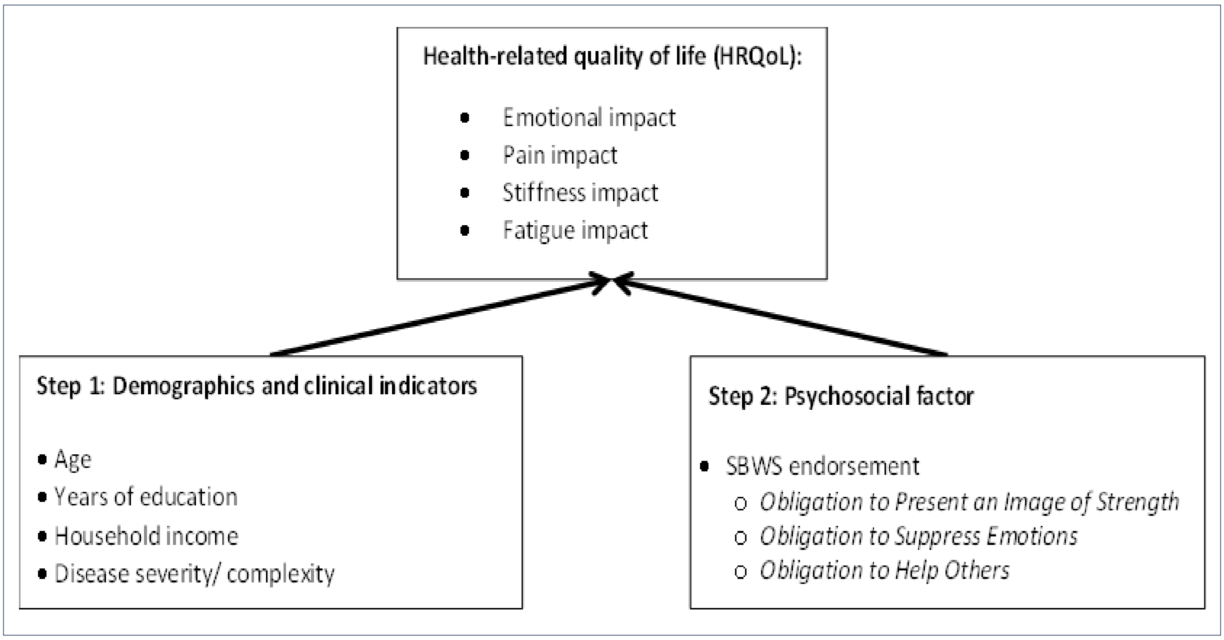
Current Study

The association between SBW-endorsement and HRQoL will be examined using a hierarchical regression model, with consideration for known demographic determinants of health and clinical indicators. It is proposed that SBW-endorsement will independently contribute to variation in HRQoL over and above these known indicators. Figure 1 shows a conceptual diagram of this proposed model. The rationale for this approach is that different SCD genotypes manifest substantial clinical differences for the SCD population, which are influenced by factors such as age, sex, steady-state haemoglobin level, and acute or chronic health complications (Quinn, 2016; Serjeant & Serjeant, 2001). Thus, researchers usually focus on disease severity first before considering other factors that may impact outcomes, including psychosocial variables. However, it is common for clinical indicators to fail at fully explaining differences in self-reported outcomes such as HRQoL in chronic conditions (Ferrucci et al., 2000). As such, other psychosocial factors may be important to consider alongside disease severity.

Thus, the primary aim of the proposed study is to explore how psychosocial factors contribute to the health and wellbeing of Black women with SCD i.e., ‘What, if any, is the association between SBW-endorsement and HRQoL, over and above the effects of established demographic and clinical indicators of health in Black women with SCD?’ Furthermore, emotion suppression is highlighted as an emerging area of importance and is also predicted to be independently associated with emotional distress. Whilst the primary HRQoL dimension under examination is emotional distress, secondary physical HRQoL dimensions of interest in SCD will also be investigated; namely, pain impact, stiffness impact and fatigue.

Figure 1

Hierarchical Regression Model of Association between SBW-endorsement and HRQoL



Primary Hypotheses

The primary research question concerns the association between emotional distress and SBW-endorsement: (1a) Endorsement of the SBW stereotype will be associated with increased emotional distress over and above the effects of demographic determinants and clinical indicators of health, in Black women with SCD; (1b) The ‘obligation to suppress emotions’ dimension of the SBW stereotype will be independently associated with increased emotional distress over and above the effects of demographic determinants and clinical indicators of health, in Black women with SCD.

Secondary Hypotheses

The secondary research question concerns the association between physical domains of HRQoL and SBW-endorsement: (2) Endorsement of the SBW stereotype will be associated with increased impact of pain, stiffness, and fatigue over and above the effects of social demographic determinants and clinical indicators of health, in Black women with SCD.

Methods

Design

This study employed a quantitative cross-sectional approach, gathering data through an online survey. Participants were eligible to participate if they were currently residing in the UK, self-identified as female (inclusive of transgender and non-binary women), were 18 years or over, identified as Black or of mixed Black in racial identity (inclusive of identities across the African diaspora), and had a clinical diagnosis of sickle cell disease (SCD). A minimum sample size of 42 was determined through an a priori power analysis using G*Power 3.1.9.7 software (Faul et al., 2009) to ensure sufficient statistical power.

Table 1

Sample characteristics (N = 48)

Characteristic (range)	*N* (%) or Mean (*SD*)
Gender Identity	
Female	48 (100%)
Age (years)	35.9 (10.5)
Ethnicity	
Black (African)	31 (64.6%)
Black (Caribbean)	9 (18.8%)
Mixed Black (African)	2 (4.2%)
Mixed Black (Caribbean)	4 (8.3%)
Black or Mixed Black (Unspecified)	2 (4.2%)
Highest Educational Attainment	
Less than secondary school: no qualifications	1 (2.1%)
College/ professional qualification (e.g., NVQ, A-levels, AS-levels, Key Skills, Higher/ Advanced Higher)	14 (29.2%)
University-level qualification (e.g., BA, BSc, MB, foundation degree)	21 (43.8%)
Post-graduate qualification (e.g., MSc, MA)	10 (20.8%)
Doctoral degree (e.g., PhD, DPhil)	2 (4.2%)
Employment	
Full-time employed	23 (47.9%)
Part-time employed	14 (29.2%)
Unemployed	9 (18.8%)
Retired	2 (4.2%)
Relationship Status	
Single	21 (43.8%)
Have a partner	13 (27.1%)
Married	10 (20.8%)
Divorced	3 (6.3%)
Widowed	1 (2.1%)
Household Income	
Less than £20,000	12 (25.0%)

Characteristic (range)	*N* (%) or Mean (*SD*)
£20,000 - £39,999	18 (37.5%)
£40,000 - £59,999	10 (20.8%)
£60,000 - £79,999	4 (8.3%)
£80,000 - £99,999	3 (6.3%)
More than £100,000	1 (2.1%)
Child Dependents	
None	23 (47.9%)
One	16 (33.3%)
Two	3 (6.3%)
Three	6 (12.5%)
SCD Type	
Sickle Cell Anaemia (HbSS)	34 (70.8%)
Sickle Haemoglobin-C (HbSC)	13 (27.1%)
Sickle Beta-Plus Thalassemia (HbSβ+)	1 (2.1%)
Stem Cell Transplant Status	
No	45 (93.8%)
Yes	1 (2.1%)
Undisclosed	2 (4.2%)
Strong Black Woman Stereotype Endorsement (0-105)	76.5 (16.4)
Obligation to present strength (0-18)	13.6 (3.2)
Obligation to suppress emotions (0-21)	15.1 (4.1)
Resistance to being vulnerable (0-21)	15.6 (4.3)
Intense motivation to succeed (0-18)	13.9 (3.0)
Obligation to help others (0-27)	18.3 (5.3)

Note. Either *M* (*SD*) or Frequency and % is reported, depending on properties of the specific variable.

Participants

The demographic characteristics of the final sample are presented in Table 1. The final sample consisted of 48 Black women who ranged from 19 to 62 years in age (*M* = 35.9 years, *SD* = 10.5). All participants identified as female (100%) All participants identified as Black, with the majority identifying as Black African (64.6%). The remaining were Black

Caribbean (18.8.7%), Mixed Black African 4.2%), Mixed Black Caribbean (8.3%) and Black or Mixed Black Unspecified (4.2%). The sample were highly educated, with the vast majority having obtained a university-level qualification or above (68.8%). Nearly half of participants were in full-time employment (47.9%), and most participants reported earnings between £20,000 and £39,999 in yearly salary (37.5%). Specific data on the UK Black female SCD population is not available. However, this sample was thought to be representative due to its similarities to the SCD population sample used in the validation of the ASCQ-Me system in a UK population – with a mostly female population reporting a mean age of 36, mostly full-time employment and a high level of education (Cooper et al., 2019).

Similarly to general SCD population prevalences (Serjeant, 2013), sickle cell anaemia (HbSS) was the most common type of SCD in this sample, followed by sickle haemoglobin-C (HbSC). A bone marrow stem cell transplant is the only cure for SCD, and those who have had a transplant may have markedly improved to no symptoms of SCD. Transplants are very uncommon due to the significant risk involved (National Health Service (NHS), 2017), so those who have had a transplant would not be representative of the typical SCD population. As only one person in this sample reported that they had received a transplant, the overall sample can be considered representative.

Procedures

Prior to receiving ethical approval from the Health Research Authority (HRA) and North of Scotland (2) NHS Research Ethics Committee (Appendix B), the recruitment materials (Appendix C) and study survey (Appendix D) were evaluated for appropriateness by several Black women living with long-term health conditions. Following this, participants were recruited using convenience methods, specifically snowball sampling. A digital recruitment poster was circulated on social media platforms (LinkedIn, Twitter, Instagram, Reddit) and shared in relevant Facebook groups (e.g., Black Women Empowerment UK) with permission. Email invitations were sent to SCD community organisation administrators to distribute among members. Additionally, NHS services shared the research with their haemoglobinopathy departments, patient support groups, and SCD patient lists. Data collection occurred between October 2023 and April 2024 via the Qualtrics survey hosting website (Qualtrics, 2005).

Ethical considerations

Gender and race identity were key considerations for inclusion criteria, recognised as social constructs rather than biologically determined categories, as per social constructivist theory (e.g., Haslanger, 2000). Consequently, inclusion criteria were underpinned by social constructivist views, and utilised self-identification as Black and female to determine participation. Those who did not identify with both key racial and gendered factors were excluded.

The study involved an anonymised survey with minimal risks. Participants engaged only with their known experiences, avoiding in-depth exploration to prevent overwhelm. Participants were advised against participation if facing or anticipating significant distress, and signposted resources for support. Participants also provided informed consent (Appendix C) and were informed they could withdraw their data at any time. Incomplete surveys were excluded from analyses, as they were interpreted as withdrawal. Participants had the option to enter a prize draw for a £75 voucher upon survey completion, intended as compensation for their time.

Measures

Dependent Variables

The Adult Sickle Cell Quality of Life Measurement Information System (ASCQ-Me). The Adult Sickle Cell Quality of Life Measurement Information System (ASCQ-Me; Keller et al., 2014) was developed to measure HRQoL specifically for individuals living with

SCD. The ASCQ-Me can be provided as five full item banks; however, the short form versions of the item banks were utilised in this study to reduce burden on participants. The ASCQ-Me Short Form consists of 25 items across 5 item banks: Pain Impact (5 items); Emotional Impact (5 items); Social Functioning Impact (5 items); Stiffness Impact (5 items); and Sleep Impact (5 items). All item banks are scored from 5 (‘never’ or ‘not at all’) to 1 (‘always’ or ‘very much’). Raw scores range from 5 to 25 and are standardised using a *t*-score transformation to have a mean of 50 and standard deviation of 10. Standardised scores can therefore be compared across the National Institutes of Health (NIH) family of patient-reported outcome measures (PROMs).

The ASCQ-Me was designed so any number or combination of item banks/ short forms can be used as required (Keller, Yang, Evensen, et al., 2017, p. 10). This study utilised three of the five short forms: Emotional Impact, Pain Impact and Stiffness Impact. Emotional Impact assesses the effect of SCD on a person's feelings and emotions (including worry, depression, and loneliness), where higher scores indicate less emotional distress and less impact of emotional distress on the person. Similarly, across all other domains, a higher score is indicative of healthier status. The ASCQ-Me Short Forms can be scored using software provided by the owners of the ASCQ-Me measure (HealthMeasures, 2024). The software is recommended for accuracy (Bulgin et al., 2019) based on item response theory (IRT), and was therefore used in the current study.

Reliability and validity evidence has been published for each individual ASCQ-Me short form. Cronbach’s alphas for all ASCQ-Me short forms and full item banks ranged between 0.90 and 0.94 in a study of 490 adults with SCD (Keller, Yang, Treadwell, et al., 2017). Additionally, ASCQ-Me has been validated for use in the UK SCD population, showing both construct and convergent validity (Cooper et al., 2019). The Sleep Impact item bank had acceptable reliability ($\alpha = .78$), with the remaining 4 item banks showing excellent reliability (.92 to .96) in a representative UK population. In this study the subscales were good to excellent in reliability: Pain Impact (α = .92), Stiffness Impact (α = .905), Emotional Impact (α = .88).

Patient Reported Outcomes Measurement Information System (PROMIS) Short Form v1.0 – Fatigue 7a. PROMIS is another NIH family of measures. It measures physical, mental, and social health for use with the general population and with individuals living with chronic conditions. The original adult Short Form v1.0 – Fatigue 7a (Lai et al., 2011) is a universal, rather than disease-specific, measure of fatigue over the past seven days. Similarly to other PROMs like the ASCQ-Me, raw scores are converted into *t*-scores with a mean of 50 and *SD* of 10. A higher PROMIS Fatigue 7a *t*-score represents higher levels of fatigue. For example, a *t*-score of 60 is one *SD* worse than average. By comparison, a fatigue *t*-score of 40 is one *SD* better than average. Therefore, higher scores represent lower health status. The Fatigue 7a is regularly employed in clinical assessment of SCD patients and has shown acceptable reliability and validity across diverse clinical populations (Ameringer et al., 2016), including in the SCD population (α = .83). In this study the scale scored well in reliability, α = .81.

Control Variables

Demographic information regarding age, educational attainment, household income and disease severity were collected to be considered for inclusion as control variables. Age was scored as a continuous variable (in years), whilst educational attainment and household income were scored as ordinal variables. Disease severity was determined using a disease-specific self-report measure as described below.

The Adult Sickle Cell Quality of Life Measurement Information System (ASCQ-ME – Sickle Cell Disease Medical History Checklist (SCD-MHC). The SCD-MHC (Keller et al., 2014) is a SCD-specific checklist of 9-items including conditions usually secondary to SCD and treatments for people with SCD which are associated with severity of SCD. Examples include organ damage, use of pain medication and treatments which are characteristic of SCD, for example, regular blood transfusions. The SCD-MHC is intended to describe the severity of an individual's SCD. Such a measure is useful over reliance on haemoglobin genotype (SCD type) as a measure of disease severity as the characteristics described in the measure account for the clinical presentation of SCD, regardless of SCD type. This is supported by evidence that shows that there is significant variation in clinical presentation and severity within SCD groups (Quinn, 2016).

This measure has previously demonstrated discriminant validity compared to a checklist of conditions not associated with SCD, and resistance to common method bias (Keller et al., 2014). Additionally, the frequency and severity of sickle cell crises is regularly used as an alternative indicator for overall disease severity during clinical trial research (Quinn, 2016; van den Tweel et al., 2007). The SCD-MHC has shown convergent validity with this alternative indicator of SCD severity, as well as other alternative indicators, for example, frequency of emergency department visits in the past year (Keller et al., 2014). To obtain a score for the SCD-MHC, the sum of the number of indicators endorsed is taken. Therefore, a higher score indicates higher disease severity (i.e., worse health).

Independent Variables

The independent variable used in this study was endorsement of the SBW stereotype. One specific dimension of SBW-endorsement (obligation to suppress emotions) was also used as an independent variable in analyses as per the study hypotheses.

The Giscombé Superwoman Schema Questionnaire (G-SWS-Q). The G-SWS-Q (Woods-Giscombé et al., 2019) was developed from a multipronged methodological strategy that included focus groups and survey data (Woods-Giscombé, 2010). The measure operationalises the characteristics of the SBW stereotype under the construct of the

Superwoman Schema (SWS). It consists of 35-items representing five dimensions of the Superwoman Schema: obligation to present an image of strength (SWS-Strength; 6 items); obligation to suppress emotions (SWS-Suppress; 7 items); resistance to being vulnerable (SWS-Vulnerable; 7 items); intense motivation to succeed (SWS-Succeed; 6 items) and obligation to help others (SWS-Help; 9 items). Sample items include, “I have to be strong,” and “I resist help to prove that I can make it on my own.” Items are scored on a Likert scale ranging from 0 (this is not true for me) to 3 (this is true for me all the time). A score for overall endorsement of the SBW stereotype can be generated by summing all 35 items together, with higher scores representing greater endorsement of SBW characteristics. Overall SBW-endorsement can also be represented by ranges as follows: low (0–35), moderate (36–70), and high (71–105). Validation of the measure was conducted in a large sample of 739 Black women in the USA.

Convergent validity was demonstrated with correlations to other related instruments such as the Strong Black Women Cultural Construct Scale (Steed, 2013). The five-factor structure was also confirmed using Confirmatory Factor Analysis, which is consistent with the Superwoman Schema Conceptual Framework (Woods-Giscombé et al., 2019). The measure also displayed good internal consistency across subscales (ranging from α = .71 to α = .88) and for the full scale (α = .92) (Woods-Giscombé et al., 2019). The subscales demonstrated good reliability in this sample for the full scale (α = .92) and across subscales (Table 2). The overall SBW-endorsement score was the main predictor variable to address both the primary and secondary research questions. The SWS-Suppress subscale was also analysed independently as part of the primary research questions.

Table 2

Cronbach's alpha of G-SWS-Q scale and subscales in study sample (N = 48)

Subscales	Number of items	Cronbach's alpha
Total G-SWS-Q scale	35	0.94
Obligation to Present an Image of Strength	6	0.74
Obligation to Suppress Emotions	7	0.82
Resistance to Being Vulnerable	7	0.88
Intense Motivation to Succeed	6	0.75
Obligation to Help Others	9	0.87

Data Analysis Plan

Data analyses were conducted using IBM SPSS Statistics for Windows (IBM Corp., 2023). Prior to inferential analyses, preliminary analyses and descriptive statistics were examined for accuracy of data entry, missing values, outliers, normal distributions, and assumptions for multivariate analyses. Cronbach's alphas were calculated for each variable to determine internal consistency (reliability) in the sample. Bivariate correlations were calculated to examine potential sociodemographic control variables. To address the research questions, a series of hierarchical regressions were conducted. The control variables were entered into the regression first, followed by predictor variables according to each hypothesis.

As HRQoL was measured across four dimensions (emotional impact, pain impact, stiffness impact, and fatigue), multiple statistical tests were performed on the same data sample (multiple comparisons problem), increasing the risk of obtaining falsely significant results (Type 1 errors) unless the standard statistical significance level ($p < .05$) is adjusted by the number of comparisons being conducted, to $p < .001$. Dimensions that are significant only at the unadjusted level may indicate Type 1 error and require further investigation.

However, there is no consensus on the implications of this problem or how to manage it, with many experts deeming such adjustments too strict (Nakagawa, 2004; Perneger, 1998). Therefore, in line with this, one primary dimension (emotional impact) was selected for a directional hypothesis addressed as the primary research question. As the primary research question, this dimension served as the only main statistical test and was reported at the standard alpha level; $p < .05$. The multiple comparisons problem was not relevant to the secondary research questions (pain impact, stiffness impact, and fatigue), as hypotheses were exploratory and non-directional.

Results

Data Screening

A total of 74 responses were recorded via the online survey. Seventeen responses (22.97%) were excluded because there was no recorded data, three responses (10.81%) were excluded because they stopped the survey immediately after provision of consent. This resulted in a final sample size of 54. The pattern of missing data was evaluated using Missing Values Analysis. Performing a complete cases analysis would yield a loss of six (11.10%) cases, as these cases were missing values on 57.1% to 85.7% of their data. A Little’s Missing Completely at Random (MCAR) test was conducted to ensure there was no systematic differences between the missing values and the observed values. The Little’s MCAR test was not significant, $\chi^2 = 20.46$, $DF = 15$, $p = .16$. This is indicative that there was no evidence that data were not missing completely at random (Little, 1988). Therefore, listwise deletion of the six cases with missing values was employed to enable further analyses. The total number of cases included in subsequent analyses was 48 with no missing data.

Scatter plots were used to inspect the linearity of the relationship between the outcome variables (HRQoL) and the predictor variables (SBW-endorsement and emotion suppression). To inspect significant outliers further, *z*-scores were calculated for all variables. *Z*-scores provide a standardised measure of distance from the mean by standard deviations. Scores above ±3.29 were used to confirm the presence of univariate outliers. Two extreme cases were identified as potential univariate outliers. Further inspection of outliers was conducted to determine any potential influence on the full regression model by multivariate outliers. Cook's Distances were used to inspect the overall multivariate influence of cases on the model, where values greater than 1 may be cause for concern (Cook & Weisberg, 1982). Based on these criteria, there were no cases of concern. Mahalanobis Distances were also inspected, as this provides additional evidence of multivariate outliers that may be exerting extreme influence on the model. There were no identified multivariate outliers using this method; therefore, despite the presence of a univariate outlier there was no evidence that this case would have a large impact on the regression model. As such, no cases were excluded from subsequent analyses.

Preliminary Analyses and Descriptive Statistics

Bivariate correlations and descriptive statistics among the study variables are presented in Table 3. Relatively low levels of HRQoL were obtained across the HRQoL dimensions, except for fatigue, which was above the standardised mean (*M* = 66.57, *SD* = 9.05). Overall, disease severity was also low in the sample (*M* = 2.13, *SD* = 1.62).

No known quantitative studies to date have been conducted with the SBW stereotype on a clinical population, descriptive statistics and preliminary analyses on the G-SWS-Q will be described in detail. The sample of women reported a high level of SBW-endorsement (*M* = 76.5, *SD* = 16.4), with a mean in the 'high SWS' range (Woods-Giscombé et al., 2019). Participants endorsed all five dimensions of the SBW stereotype as noted by moderate to high means on the G-SWS-Q subscales. Household income was significantly negatively correlated with the G-SWS-Q total score, *r* = -.31, *p* = .03, indicating that those with higher household income tended to endorse the SBW stereotype less. This association was also seen between household income and the SWS-Suppression (*r* = -.32, *p* = .03) and SWS-Succeed (*r* = -.35, *p* = .02) subscales specifically. Similarly, those with higher education tended to endorse lower levels of SWS-Suppression (*r* = -.39, *p* = .006) and SWS-Resistance (*r* = -.35, *p* = .02). Demographic variables were also examined with bivariate correlations (Table 3). These correlations indicated significant associations between household income, education level, and disease severity and the key variables (SBW-endorsement, SWS-Suppress and HRQoL), thus these demographic variables were retained as covariates.

Multicollinearity arises when predictor variables are highly correlated, hindering assessment of their individual influence on the regression model. This was investigated using the variance inflation factor (VIF), with values exceeding 10 indicating significant multicollinearity (Bowerman & O'Connell, 2000; O'Brien, 2007). VIF values for all predictors were ≤ 3.99; therefore, age was also retained as a covariate despite its significant correlation with disease severity ($r = .34$). The VIF between SBW-endorsement and SWS-suppression was over 3, which was of some concern alongside their high level of correlation ($r = .83$, $p < .001$). Although this correlation was expected considering SWS-suppression is a subscale of the SBW-endorsement scale, this could lead to difficulties in establishing the independent contributions of each measure. As such, analyses for each measure were run as separate hierarchical regressions to ensure that the individual influence of each predictor could be assessed. This method was also in-keeping with the proposed hypotheses exploring SWS-suppression independently of full SBW-endorsement. Multiple linear regression assumptions of error normality, independence of errors, and homoscedasticity were confirmed satisfied through the inspection of scatterplots of residuals that showed approximate normality of plotted residuals. A scatterplot of standardised residuals was used to confirm the assumption of homoscedasticity as no values were greater than ±3. These assumptions were also checked in relation to the secondary hypotheses.

Table 3

Descriptive statistics and intercorrelations among study variables (N = 48)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Predictor variables														
1. Age	_													
2. Household Income Level	-.15	_												
3. Education Level	.07	.31*	_											
4. SCD Disease Severity	.34*	.08	-.15	_										
5. SBW-endorsement	.04	-.31*	-.27	.16	_									
6. Obligation to Present an Image of Strength	.15	-.16	-.09	.27	.78**	_								
7. Obligation to Suppress Emotions	-.16	-.32*	-.39**	.09	.83**	.62**	_							
8. Resistance to Being Vulnerable	-.08	-.21	-.35*	.02	.85**	.50**	.76**	_						
9. Intense Motivation to Succeed	-.07	-.35*	-.06	-.05	.83**	.57**	.58**	.69**	_					
10. Obligation to Help Others	.26	-.24	-.17	.28	.82**	.58**	.46**	.55**	.65**	_				
Outcome variables														
11. ASCQ-Me Emotional Impact	.08	.33*	.19	-.34*	-.51**	-.44**	-.48**	-.42**	-.44**	-.34*	_			
12. ASCQ-Me Pain Impact	.24	.11	.22	-.38**	-.27	-.27	-.34*	-.26	-.18	-.09	.69**	_		
13. ASCQ-Me Stiffness Impact	.03	.02	.26	-.47**	-.28	-.38**	-.28	-.16	-.12	-.21	.59**	.72**	_	
14. PROMIS Fatigue	-.05	-.32*	-.38**	.36*	.32*	.29*	.41**	.22	.11	.27	-.55**	-.63**	-.59**	_
M	35.92	2.40	3.94	2.13	76.48	13.60	15.06	15.63	13.89	18.29	41.08	43.72	44.46	66.57
SD	10.55	1.25	0.93	1.62	16.36	3.22	4.10	4.28	3.02	5.28	6.84	7.85	7.81	9.05
Range	19-62	1-6	1-6	0-10	0-105	0-18	0-21	0-21	0-18	0-27	0-100	0-100	0-100	0-100

Note. Range indicates the minimum and maximum potential values for scale scores and the observed values for age. *$p<.05$. **$p<.01$

SBW-endorsement and the Emotional Impact of SCD

Hierarchical multiple regression was performed to investigate the association between SBW-endorsement and emotional impact of SCD, after controlling for demographic factors and disease severity. Table 4 summarises the hierarchical regression analysis that was conducted to analyse the first predictor of concern, SBW-endorsement. The first step of the regression consisted of the control variables (age, educational attainment, household income and disease severity). This model was statistically significant, $F_{(4, 43)} = 5.04$, $p = .002$, and accounted for approximately 32% of variance in the model. Only age, income and disease severity made significant unique contributions to the model. Older age ($\beta = .31$, 95% CI [.02, .38], $t = 2.19$, $p = .03$) and higher household income ($\beta = .43$, 95% CI [.82, 3.86], $t = 3.09$, $p = .003$) were associated with higher health status i.e., reduced emotional impact of SCD. Higher disease severity was associated with lower health status i.e., increased emotional impact of SCD ($\beta = -.48$, 95% CI [-3.24, -.85], $t = -3.46$, $p = .001$). SBW-endorsement was added at the second step and this new model accounted for an additional 12% of variance, $\Delta F_{(1,42)} = 9.14$, $p = .004$, with higher SBW-endorsement associated with lower health status i.e., increased emotional impact of SCD ($\beta = -.38$, 95% CI [.-27, -.05], $t = -3.02$, $p = .004$). The final regression model accounted for approximately 44% of variance in emotional impact, $R^2 = .44$, $F_{(5,42)} = 6.63$, $p < .001$.

Table 4

Hierarchical Regression Results for SBW-endorsement and Emotional Impact

	Model 1			Model 2			95% CI for B at Model 2	
Variable	*B*	*SE B*	β	*B*	*SE B*	β	LL	UL
Step 1								
Age	0.19	0.09	.31*	0.19	0.08	.29*	0.02	0.35
Household Income	2.34	0.76	.43**	1.75	0.72	.32*	0.29	3.19
Education	-0.32	1.01	-.04	-0.74	0.94	-.10	-2.63	1.16
Disease Severity	-2.04	0.59	-.48***	-1.75	0.55	-.41**	-2.86	-0.64
Step 2								
SBW-endorsement	_	_	_	-0.16	0.05	-.38**	-0.27	-0.05
R^2		.32			.44			
Adjusted R^2		.26			.37			
ΔR^2		.32			.12			

Note. B = unstandardised beta ; *SE* = standard error; β = standardised beta; CI = confidence interval; LL = lower limit; UL = upper limit; ΔR^2 = change in R^2. *$p < .05$. **$p < .01$. ***$p < .001$.

Table 5 summarises the hierarchical regression analysis that was conducted to analyse the second predictor of concern, obligation to suppress emotions. The first step of the regression consisted of the control variables (age, educational attainment, household income and disease severity). This model was statistically significant, $F_{(4, 43)} = 5.04$, $p = .002$, and accounted for approximately 32% of variance in the model. Only age, income and disease severity made significant unique contributions to the model. Older age (β = .31, 95% CI [.02, .38], $t = 2.19$, $p = .03$) and higher household income (β = .43, 95% CI [.82, 3.86], $t = 3.09$, $p = .003$) were associated with reduced emotional impact of SCD. Higher disease severity was associated with increased emotional impact of SCD (β = -.48, 95% CI [-3.24, -.85], $t = -3.46$, $p = .001$). SWS-suppression was added at the second step and this new model accounted for an additional 9% of variance, $\Delta F_{(1,42)} = 6.41$, $p = .015$, with higher obligation to suppress emotions associated with increased emotional impact of SCD with higher SBW-endorsement associated with increased emotional impact of SCD (β = -.35, 95% CI [.-1.04, -.12], *t* = -2.53, *p* = .015). In this final regression model age became a non-significant predictor and the model accounted for approximately 41% of variance in emotional impact, R^2 = .41, $F_{(5,42)}$ = 5.83, *p* <.001).

Table 5

Hierarchical Regression Results for Obligation to suppress emotions and Emotional Impact

	Model 1			Model 2			95% CI for B at Model 2	
Variable	*B*	*SE B*	β	*B*	*SE B*	β	LL	UL
Step 1								
Age	0.19	0.09	.31*	0.15	0.09	.22	-0.03	0.32
Household Income	2.34	0.76	.43**	1.79	0.75	.33*	0.28	3.29
Education	-0.32	1.01	-.04	-0.96	0.99	-.13	-2.96	1.03
Disease Severity	-2.04	0.59	-.48***	-1.81	0.57	-.43**	-2.95	-0.67
Step 2								
Obligation to suppress emotions	_	_	_	-0.58	0.23	-.35*	-1.04	-0.12
R^2		.32			.41			
Adjusted R^2		.26			.34			
ΔR^2		.32			.09			

Note. B = unstandardised beta ; *SE* = standard error; β = standardised beta; CI = confidence interval; LL = lower limit; UL = upper limit; ΔR^2 = change in R^2. **p* < .05. ***p* < .01. ****p* < .001.

SBW-endorsement and the Physical Health Impact of SCD

The secondary research questions were exploratory. SBW-endorsement was entered at the second step across the regression models for each physical health HRQoL measure.

SBW-endorsement and Pain Impact

Table 6 summarises the hierarchical regression analysis that was conducted to analyse the effect of the test predictors on pain impact of SCD. The first step of the regression consisted of the control variables of age, educational attainment, household income and disease severity. This model was statistically significant and accounted for approximately 35% of variance in the model, $R^2 = .35$, $F_{(4, 43)} = 5.76$, $p <.001$. Only age and disease severity were significant unique predictors. Older age ($\beta = .45$, $t = 3.31$, $p = .002$) was associated with higher status i.e., lower pain impact of SCD. Higher disease severity was associated with lower status i.e., increased pain impact of SCD ($\beta = -.55$, $t = -4.01$, $p <.001$). SBW-endorsement was added at the second step and this new model did not account for a significant amount of additional variance, $\Delta F_{(1,42)} = 1.14$, $p = .29$, in health status in pain impact. The overall regression model predicted approximately 37% of variance in pain impact, $R^2 = .37$, $F_{(5,42)} = 4.85$, $p = .001$).

Table 6

Hierarchical Regression Results for SBW-endorsement and Pain Impact

	Model 1			Model 2			95% CI for *B* at Model 2	
Variable	*B*	SE B	β	*B*	*SE B*	β	LL	UL
Step 1								
Age	0.34	0.10	.45**	0.33	0.10	.44**	0.13	0.54
Household Income	1.26	0.85	.20	1.01	0.88	.16	-0.77	2.78
Education	0.38	1.14	.05	0.20	1.15	.02	-2.11	2.52
Disease Severity	-2.66	0.66	-.55***	-2.53	0.67	-.52***	-3.89	-1.18
Step 2								
SBW-endorsement	_	_	_	-0.07	0.06	-.14	-0.19	0.06
R^2		.35			.37			
Adjusted R^2		.29			.29			
ΔR^2		.35			.02			

Note. B = unstandardised beta ; *SE* = standard error; β = standardised beta; CI = confidence interval; LL = lower limit; UL = upper limit; ΔR^2 = change in R^2. *$p < .05$. **$p < .01$. ***$p < .001$.

SBW-endorsement and Stiffness Impact

Table 7 summarises the hierarchical regression analysis that was conducted to analyse the effect of the test predictors on stiffness impact of SCD. The first step of the regression consisted of the control variables of age, educational attainment, household income and disease severity. This model was statistically significant and accounted for approximately 29% of variance in the model, $R^2 = .29$, $F_{(4, 43)} = 4.29$, $p = .005$. Only disease severity was a significant unique predictor, where higher disease severity was associated with lower status i.e., increased stiffness impact of SCD ($\beta = -.52$, $t = -3.61$, $p < .001$). SBW-endorsement was added at the second step and this new model did not account for a significant amount of additional variance, $\Delta F_{(1,42)} = 1.51$, $p = .23$, in health status on stiffness impact. The overall regression model predicted approximately 31% of variance in pain impact, $R^2 = .31$, $F_{(5,42)} = 3.78$, $p = .006$).

Table 7

Hierarchical Regression Results for SBW-endorsement and Stiffness Impact

	Model 1			Model 2			95% CI for B at Model 2	
Variable	*B*	*SE B*	β	*B*	*SE B*	β	LL	UL
Step 1								
Age	0.15	0.11	.20	0.14	0.11	.19	-0.07	0.35
Household Income	0.29	0.88	.05	-0.02	0.91	-.003	-1.86	1.82
Education	1.26	1.19	.15	1.04	1.19	.12	-1.36	3.44
Disease Severity	-2.49	0.69	-.52***	-2.34	0.69	-.49**	-3.75	-0.93
Step 2								
SBW-endorsement	_	_	_	-0.08	0.07	-.17	-.22	0.05
R^2		.29			.31			
Adjusted R^2		.22			.23			
ΔR^2		.29			.03			

Note. *B* = unstandardised beta ; *SE* = standard error; β = standardised beta; CI = confidence interval; LL = lower limit; UL = upper limit; ΔR^2 = change in R^2. $^*p < .05$. $^{**}p < .01$. $^{***}p < .001$.

SBW-endorsement and Fatigue

Table 8 summarises the hierarchical regression analysis that was conducted to analyse the effect of the test predictors on fatigue in Black women with SCD. The first step of the regression consisted of the control variables of age, educational attainment, household income and disease severity. This model was statistically significant and accounted for approximately 35% of variance in the model, $R^2 = .35$, $F_{(4, 43)} = 5.76$, $p < .001$. Household income and disease severity were significant unique predictors, whereby higher household income was associated with reduced fatigue ($\beta = -.33$, $t = -2.44$, $p = .02$) and higher disease severity was associated with increased fatigue ($\beta = .44$, $t = 3.25$, $p = .002$). SBW-endorsement was added at the second step and this new model did not account for a significant amount of additional variance, $\Delta F_{(1,42)} = .91$, $p = .35$, in fatigue. The overall regression model predicted approximately 36% of variance in fatigue, $R^2 = .36$, $F_{(5,42)} = 4.78$, $p = .002$).

Table 8

Hierarchical Regression Results for SBW-endorsement and Fatigue

	Model 1			Model 2			95% CI for B at Model 2	
Variable	*B*	*SE B*	β	*B*	*SE B*	β	LL	UL
Step 1								
Age	-0.20	0.12	-.24	-0.19	0.12	-.23	-0.43	0.04
Household Income	-2.38	0.98	-.33	-2.11	1.02	-.29	-4.16	-0.06
Education	-1.83	1.31	-.19	-1.65	1.33	-.17	-4.32	1.03
Disease Severity	2.48	0.76	.44	2.35	0.78	.42	0.78	3.92
Step 2								
SBW-endorsement	_	_	_	0.07	0.07	.13	-.08	0.22
R^2		.35			.36			
Adjusted R^2		.29			.29			
ΔR^2		.35			.01			

Note. *B* = unstandardised beta ; *SE* = standard error; β = standardised beta; CI = confidence interval; LL = lower limit; UL = upper limit; ΔR^2 = change in R^2. *$p < .05$. **$p < .01$. ***$p < .001$.

Discussion

The current study is among the first to examine the impact of the SBW stereotype on health outcomes in a clinical population of Black women, and in a UK setting. The study specifically examined associations with consideration for the extant literature on the adverse impacts of discrimination on wellbeing as a function of social determinants of health (Paradies et al., 2015).

Although current SCD research confirms genetic and clinical contributors to various disease complications, there has been a failure to extensively consider external and psychosocial influences on outcomes. This may be due to a lack of research designs that have considered sociocultural contexts through an intersectional lens, from which beliefs about the self and health operate. As the SBW stereotype is one such sociocultural concept that has been shown to impact wellbeing in the general population, the experiences of an associated sample of Black women were used to address these gaps in the SCD research. Evidence was found to support the expanding literature on the relevance of the SBW stereotype, and, thus, other forms of discrimination.

SBW-endorsement and emotional wellbeing

The primary research questions centred around the association of SBW-endorsement and the emotional impact of SCD. It was hypothesised that SBW-endorsement would be associated with increased negative emotions and a higher impact of emotional distress on individuals. Results indicated that SBW-endorsement was negatively associated with the emotional impact of SCD. Furthermore, a relatively large amount of variance in emotional impact was explained by SBW-endorsement, which was over and above biological and demographic indicators of HRQoL. This particular finding is significant in that it demonstrates the unique role that a key social determinant of health (discrimination) has in the management of a highly racialised chronic health condition. This aligns with a growing body of research and activist thought that has highlighted the link between systemic discrimination and health provision and outcomes in SCD in the UK (Kushnick, 1988; Redhead, 2021; Sickle Cell Society, 2021).

The significance of emotion suppression

It was also hypothesised that emotion suppression would be independently associated with emotional distress. This hypothesis was fully supported, as study results revealed that higher endorsement of the SBW dimension of ‘obligation to suppress emotions’ was associated with increased distress and impact of distress. This provides evidence that emotion suppression had an impact over and above biological and demographic determinants, and even in the absence of full-scale SBW-endorsement. As this finding is consistent with other studies indicating the psychological harm of emotion suppression (Abrams et al., 2019; Leath et al., 2022; Nelson et al., 2024), this confirms emotional suppression as an important factor to consider in both non-clinical and clinical populations.

It should be noted that in both the main analyses, disease severity always explained a substantially higher amount of variance before SBW-endorsement was added. As such, the findings here do not discount the impact of biological determinants, but rather provide evidence for psychosocial determinants that are often ignored.

The link between psychosocial factors and physical wellbeing

The secondary aim of this study was to tentatively explore SBW-endorsement and physical health domains of HRQoL. It was hypothesised that SBW-endorsement would explain variance in fatigue, and pain and stiffness impact in Black women with SCD; whereby SBW-endorsement would negatively impact this variance over and above clinical and demographic determinants. Contrary to predictions, no link was found between SBW-endorsement and any of the physical health domains. One possible explanation for these null findings is that other relevant factors were not accounted for in the model involving physical wellbeing. It may be that SBW-endorsement alone is not sufficient to understand these complex interactions. Mediation analyses that consider the pathways through which SBW-endorsement may affect physical wellbeing domains may be important to consider in future research. For example, the impact of emotion suppression on emotional wellbeing was strongly supported during the main analyses. It may be that it would be important to explore emotion suppression not as an independent predictor in physical wellbeing, but as a mediator, whereby SBW impacts physical wellbeing through emotional suppression.

Strengths and Limitations

Several limitations should be noted. The data come from a cross-sectional observational study, preventing definitive causal claims or inferences about the direction of relationships between SBW-endorsement and HRQoL. Future research should overcome this limitation by replicating and expanding these findings using longitudinal or experimental approaches. For example, study designs could track the progression of perceived discrimination, SBW-endorsement, emotion suppression, and HRQoL over time to elucidate the direction of effects.

Secondly, as all data were based on self-reports, the possibility of recall bias cannot be excluded. However, a strength of this study was the quality of the materials utilised. The study used psychometrically sound measures to examine the variables of interest. Informed by an intersectionality framework, validated measures of HRQoL and SBW-endorsement tailored for SCD and Black female populations were employed. Patient-reported outcome measures (PROMs) measure a patient’s health status or health-related quality of life at a single point in time and have been routinely collected by NHS providers since 2009. Validated PROMs are useful tools in clinical research and care, and they foster a patient-centred approach where researchers and clinicians understand and incorporate patient symptoms and perspectives. ASCQ-Me is part of a family of measures that can be compared as they are all standardised. This enables comparisons of health outcomes across different chronic conditions, which will be integral to continued research and resource management. Research already shows that resources are not fairly distributed for SCD as compared to a comparable chronic condition – cystic fibrosis (Farooq et al., 2020).

Furthermore, a newly validated and well-researched measure of SBW was utilised. Most studies examining SBW-endorsement have been heterogenous in the measures used to operationalise the SBW stereotype. A recent scoping review recommended the G-SWS-Q as an appropriate measure (Z. Thomas et al., 2022). Use of the G-SWS-Q in this research and future research will be useful for standardising an SBW measure to expanding research in this area.

Finally, although the study was adequately powered, the sample was not randomly selected and therefore, generalisation of the findings to the population of Black women with SCD in the UK should be made with caution.

Future Research

This is one of the first studies to quantitatively examine SBW-endorsement in a clinical population. Overall, both the significant and non-significant findings underscore the importance of further exploration of social determinants of health. It is possible that compounded experiences of discrimination and disease burden are better explored in larger samples due to the complexity of interactions. Researchers should explore SBW-endorsement in more diverse SCD populations so can compare between groups if the effect of SBW-endorsement still stands.

In this study, the appraisal component of the SBW-endorsement measure was not utilised, as it is not commonly employed in empirical studies using the G-SWS-Q (e.g., Erving et al., 2024; Leath et al., 2022; Platt & Fanning, 2023; Woods-Giscombé et al., 2019); therefore, reliability and validity data are not available. Appraisals refer to how individuals evaluate stressors and their own ability to handle them. The SBW often stereotype emphasises strength, resilience, and self-sufficiency, leading Black women to downplay their vulnerabilities and emotional needs. This makes appraisals an important factor when researching the impact of SBW-endorsement on mental wellbeing. Those who strongly identify with the SBW stereotype may use maladaptive coping strategies, such as emotion suppression or avoidance, believing they should handle difficulties alone. The current study supports this, finding that emotion suppression is significantly associated with emotional distress. It may be that the inclusion of appraisals in analyses could account for some of the differences seen in the health outcomes of those endorsing the SBW stereotype. This is a promising area for future research, where the effectiveness of different therapies on emotion suppression in Black women could be explored.

Regarding the quantitative analysis of concepts such as the SBW stereotype, Lanza & Rhoades (2013) recommend more person-centred methodologies like latent class analysis (a technique for identifying individuals based on unobserved categories) to explore potential variations in experience of the stereotype. Such approaches could better identify specific patterns among groups of Black women, thereby addressing the diversity within this population more effectively. Additionally, this method can mitigate methodological obstacles encountered in subgroup analysis, such as elevated Type I error rates, diminished statistical power, and constraints in exploring higher-order interactions.

Practice Implications

It is important that healthcare providers understand the SBW stereotype to develop appropriate interventions to support marginalised communities. Practitioners should recognise that interventions designed to alleviate distress and those aimed at mitigating disease severity might diverge and require distinct focuses. When assisting Black women in alleviating distress, it's crucial to devise approaches that account for their unique experiences, particularly in navigating gendered and racially charged challenges associated with sickle cell disease.

Furthermore, therapists could consider how the stereotype may impact Black women during therapy sessions and other contacts with healthcare services. This study highlighted the importance of emotion suppression and stress appraisals in the experience of emotional distress for Black women endorsing the SBW stereotype. Consequently, there may be a hesitancy to convey vulnerable emotions in therapeutic settings that is misinterpreted as disengagement. Practitioners should be mindful of how entrenched sociocultural norms may dictate openness. It may be that alternative means of emotional expression should be integrated into therapeutic work, for example, artwork or poetry. Clinicians who are unaware of the SBW may misinterpret or underestimate the client's levels of distress, leading to a lack of appropriate interventions. By integrating knowledge of the SBW stereotype into their practice, mental health professionals can create a more supportive environment that acknowledges the unique cultural and historical contexts affecting their clients. This cultural competence is essential for fostering an atmosphere where Black women feel safe to explore their emotions and vulnerabilities without the pressure to conform to societal expectations of strength.

Conclusion

To date, research on the SBW stereotype has primarily focused on the USA and general populations of Black women. Additionally, there is a lack of comparative research on clinical indicators and psychosocial factors in underserved populations like those living with SCD. This study is therefore a novel contribution to the growing literature on discrimination and social determinants of health. This study fills a critical research gap by exploring the SBW stereotype within a UK clinical population and its negative impact on Black women's wellbeing. It reveals that while SBW endorsement plays a role, its influence is modest compared to the more significant effect of disease severity. These findings highlight the importance of integrating psychosocial factors with clinical considerations when addressing health outcomes in the SCD population, particularly among Black women. By understanding these internal influences, healthcare providers can develop targeted interventions to mitigate distress and emotional challenges. Furthermore, addressing barriers to support, such as racial-gendered discrimination, is vital for reducing health disparities experienced by Black women, and wider marginalised populations.

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SECTION C: Appendices of supporting information

Appendix A: Quality Assessment of Included Articles Using the Newcastle-Ottawa Scale

Study (author, year)	Selection (Max. 5)				Comparability (Max. 2)	Outcomes (Max. 3)		Total Score (Max. 10)	Key limitations of study (qualitative assessment)
	Representativeness of the sample (Max. 1)	Sample size (Max. 1)	Non-respondents (Max. 1)	Ascertainment of the exposure (risk factor) (Max. 2)		Assessment of outcomes (Max. 2)	Statistical test (Max. 1)		
Abrams et al., (2019)	1	1	1	2	1	1	1	8	Only two sociodemographic confounders controlled for; no theoretical confounders.
Castelin & West (2022)	1	1	1	2	0	1	1	7	No confounders controlled for.
Donovan & West (2015)	1	0	0	2	0	1	1	5	Sample population exclusively from university students, and no confounders controlled for. Relatively small sample size (N = 92) for moderation analyses
Drakeford (2017)	1	1	1	2	2	1	1	9	No theoretical confounders controlled for. Not peer-reviewed.
Erving et al., (2024)	1	1	1	2	2	1	1	9	Demographic confounders; no theoretical confounders.
Hall (2017)	1	1	1	1	2	1	1	8	Analyses included both Black women and White women. Not peer-reviewed.
Henry et al., (2024)	1	1	0	2	2	1	0	7	Familywise error from concurrent regression analyses. Stepwise entry used in regression model.
Jones et al., (2021)	1	1	1	2	0	1	1	7	Sample not very representative and no confounders controlled.

Knighton et al., (2022)	1	1	0	2	1	1	1	7	Only controlled for one demographic confounder. More appropriate measures available.
Leath et al., (2022)	1	1	0	2	0	1	1	6	Confounders not included in analysis.
Liao et al., (2020)	0	1	1	2	2	1	1	8	Recruitment exclusively from one university student population.
Nelson et al., (2024)	1	1	1	2	2	1	1	9	Self-report measures used.
Offutt (2013)	0	1	0	1	0	1	0	3	Sampling exclusively from 2 local churches. Measures not fully valid and reliable and no controls. Inappropriate analyses and not peer-reviewed.
Perez et al., (2023)	1	1	1	2	2	1	1	9	Self-report measures used.
Stanton et al., (2017)	1	1	1	2	2	1	1	9	Self-report measures used.
Watson & Hunter, (2015)	1	1	0	2	2	1	1	8	Demographic confounders; no theoretical confounders.
Woods (2013)	1	1	0	2	2	1	1	8	Partial correlation used where regression would have been more rigorous. Not peer-reviewed
Woods-Giscombé et al., (2019)	1	1	1	2	0	1	1	7	No controls; however, this was a measure validation study.

Appendix B: Ethics Approval

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Appendix C: Study Recruitment Materials

EXPLORING STEREOTYPING AND HEALTH OUTCOMES IN BLACK WOMEN WITH SICKLE CELL DISEASE

[redacted]

What is the research about?

Are you a Black woman with sickle cell disease? We want to understand your experience of racial and gendered stereotyping and how this may relate to your wellbeing.

Who can take part?

You must:
- be 18 years of age or over
- identify as Black or Mixed Black
- identify as female
- have a clinical diagnosis of sickle cell disease
- Based in the UK

Scan me, or follow the web address below!

HOW TO TAKE PART?

[redacted]

1 To take part, scan the QR code or follow the link to take an **online survey.**

2 The survey will take **15-20 minutes** to complete.

[redacted]

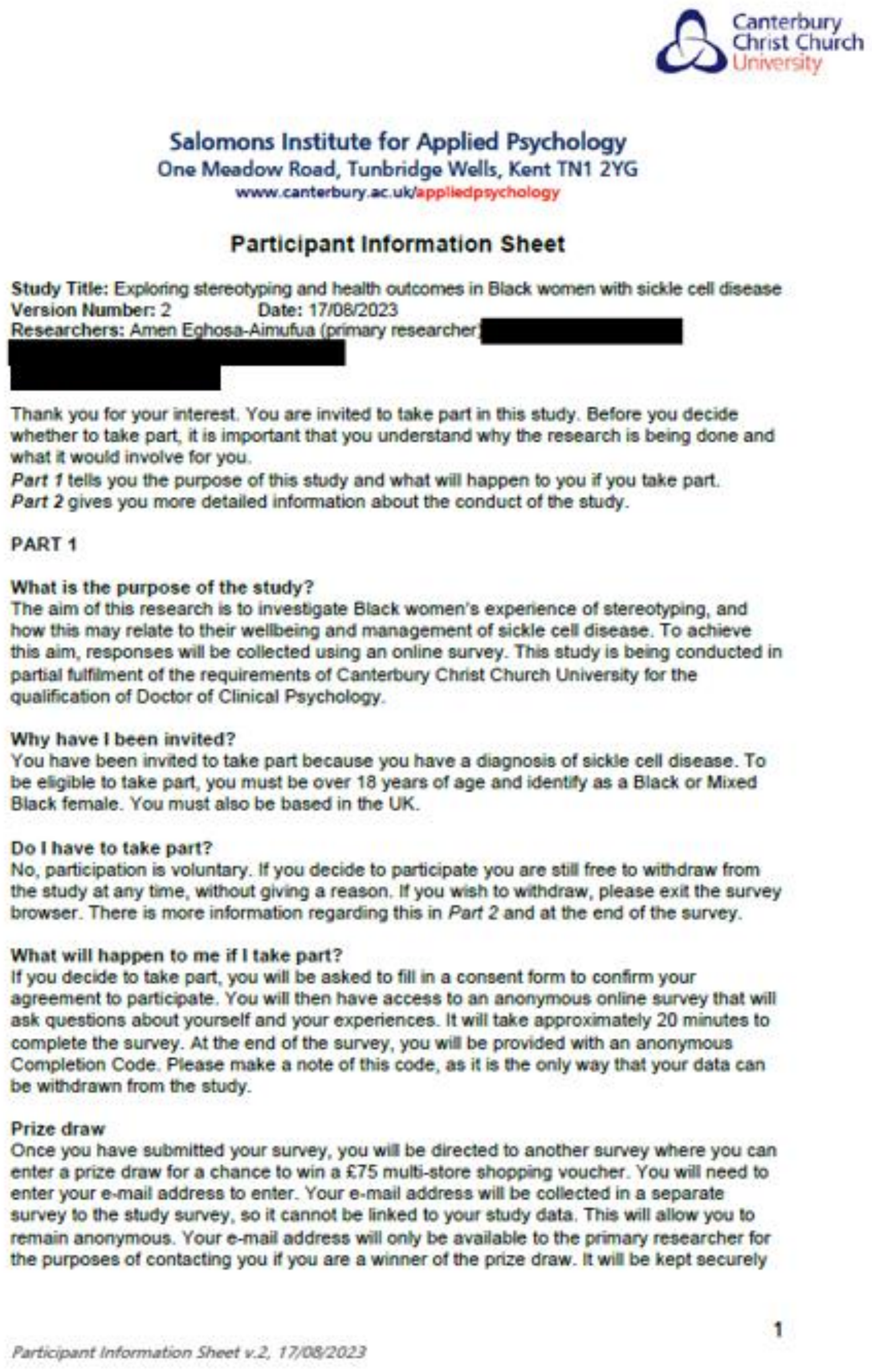
3 After completing the survey you can enter a **prize draw** to win a **£75 multi-store voucher**!

Canterbury Christ Church University

If you have any questions, or would like more information, please contact me:

Researcher: Amen Eghosa-Aimufua [redacted]

[redacted]



Canterbury Christ Church University

Salomons Institute for Applied Psychology
One Meadow Road, Tunbridge Wells, Kent TN1 2YG
www.canterbury.ac.uk/appliedpsychology

Participant Information Sheet

Study Title: Exploring stereotyping and health outcomes in Black women with sickle cell disease
Version Number: 2 Date: 17/08/2023
Researchers: Amen Eghosa-Aimufua (primary researcher) [redacted]

Thank you for your interest. You are invited to take part in this study. Before you decide whether to take part, it is important that you understand why the research is being done and what it would involve for you.
Part 1 tells you the purpose of this study and what will happen to you if you take part.
Part 2 gives you more detailed information about the conduct of the study.

PART 1

What is the purpose of the study?
The aim of this research is to investigate Black women's experience of stereotyping, and how this may relate to their wellbeing and management of sickle cell disease. To achieve this aim, responses will be collected using an online survey. This study is being conducted in partial fulfilment of the requirements of Canterbury Christ Church University for the qualification of Doctor of Clinical Psychology.

Why have I been invited?
You have been invited to take part because you have a diagnosis of sickle cell disease. To be eligible to take part, you must be over 18 years of age and identify as a Black or Mixed Black female. You must also be based in the UK.

Do I have to take part?
No, participation is voluntary. If you decide to participate you are still free to withdraw from the study at any time, without giving a reason. If you wish to withdraw, please exit the survey browser. There is more information regarding this in *Part 2* and at the end of the survey.

What will happen to me if I take part?
If you decide to take part, you will be asked to fill in a consent form to confirm your agreement to participate. You will then have access to an anonymous online survey that will ask questions about yourself and your experiences. It will take approximately 20 minutes to complete the survey. At the end of the survey, you will be provided with an anonymous Completion Code. Please make a note of this code, as it is the only way that your data can be withdrawn from the study.

Prize draw
Once you have submitted your survey, you will be directed to another survey where you can enter a prize draw for a chance to win a £75 multi-store shopping voucher. You will need to enter your e-mail address to enter. Your e-mail address will be collected in a separate survey to the study survey, so it cannot be linked to your study data. This will allow you to remain anonymous. Your e-mail address will only be available to the primary researcher for the purposes of contacting you if you are a winner of the prize draw. It will be kept securely

until the winner of the prize draw is announced by the end of April 2024.

What are the possible disadvantages and risks of taking part?
As this study involves an anonymised survey, there are few risks. However, depending on the nature of your experiences, you might find the topics that are addressed by questions upsetting or uncomfortable. The questions ask about your physical and mental wellbeing in relation to sickle cell disease, which my bring up specific memories and feelings. You are welcome to complete this survey at your own convenience and discuss it with others. Please take time to consider carefully whether it may be too upsetting for you to complete this questionnaire now. It is advised that those currently experiencing considerable distress or anticipate that taking part may cause them considerable distress should not take part.

You will be provided with contact information for wellbeing services that you can access for support.

What are the possible benefits of taking part?
Your contribution, alongside the contributions of other participants, will help researchers to better understand the relationship between identity and health experiences of Black women and contributing to the evidence base required to inform culturally relevant assessment and treatment practices in the care of Black women with sickle cell disease.

What if there is a problem?
Any complaint about the way you have been dealt with during the study or any possible harm you might suffer will be addressed. Please see *Part 2* for more information.

Will information from, or about, me be kept confidential?
As a publicly funded organisation, Canterbury Christ Church University (CCCU) must ensure that your data is processed fairly and lawfully. Your personal data will be held and processed in the strictest confidence, and in accordance with current data protection regulations. All personal data (i.e., e-mail address) related to this study will be deleted on completion of the study by the end of April 2024. Following this, any anonymised aggregated data will be stored by CCCU for a minimum of 10 years. More details regarding this are included in *Part 2*.

How will we use your information?
In this research study we will use information from you. We will only use information that we need for the research study. We will let very few people know your contact details, and only if they really need it for this study. Everyone involved in this study will keep your data safe and secure. We will also follow all privacy rules.

At the end of the study, we will save some of the data in case we need to check it. We will make sure no-one can work out who you are from the reports we write. *Part 2* tells you more about this.

This completes Part 1.
If the information in Part 1 has interested you and you are considering participation, please read the additional information in Part 2 before making a final decision.

PART 2

Your right to withdrawal
If you withdraw your data no further information would be collected, or any other research procedures would be carried out on, or in, relation to you. You can withdraw from the study at any point whilst filling out the survey by exiting the browser.

Once the survey has been submitted it is not identifiable to the researchers except using the anonymous Completion Code. You will need to contact the researcher within 1 month of submitting your survey, and no later than December 2023, to request this. Please use the e-mail address [redacted] and quote your anonymous Completion Code to withdraw your completed survey. You can also withdraw the e-mail address that was provided to enter the prize draw by contacting the researcher using the e-mail address. This would also mean withdrawal from the prize draw. All withdrawn information will be securely destroyed within 5 working days.

Concerns and Complaints
If you are unsure about anything, or if you wish to complain or have any concerns about any aspect of the way you have been treated during this study, you can contact the research team for further advice. You can contact the primary researcher by leaving a message on the 24-hour voicemail phone number 01227 927070. Please leave a contact number and say that the message is for the researcher, Amen Eghosa-Aimufua. If you remain dissatisfied and wish to complain formally, you can do this by contacting:

[redacted]

Confidentiality
Data will be collected anonymously using an online survey. As a publicly funded organisation, we must ensure that when we use identifiable personal information from people who have agreed to take part in research, that this data is processed fairly and lawfully. Canterbury Christ Church University (CCCU) processes personal data for the purposes of carrying out research in the public interest and special category data is processed on an additional condition necessary for research purposes. This means that when you agree to take part in this research study, we will use and look after your data in the ways needed to achieve the outcomes of the study.

Your personal data will be held and processed in the strictest confidence, and in accordance with current data protection regulations. All identifiable personal data (i.e., e-mail address) related to this study will be deleted on completion of the study by the end of April 2024. Following this, any anonymised aggregated data may be stored by CCCU for a minimum of 10 years.

Your rights to access, change or move your information are limited, as we need to manage your information in specific ways for the research to be reliable and accurate. If you decide to withdraw from the study after the deadline indicated previously, we may not be able to withdraw your data. We will keep and use the minimum amount of personally identifiable information about you that we have already obtained in order to complete the study.

What will happen to the results of the research study?
A final report summarising the main findings of this study will be produced by the primary researcher as part of the requirements of a Doctorate course in Clinical Psychology. This research may be published in peer-reviewed scientific journals. Only anonymised data will

be included in any publications, so your confidentiality and anonymity will be maintained. If you wish to be kept up to date with the findings of the study, you have the option to do so by contacting the primary researcher using the contact details included in this information sheet. You can contact the study team via the contact details provided in this information sheet to find out the results of the study following April 2024.

Fully anonymous quantitative data will be uploaded to a publicly available repository, to be made available indefinitely, in line with open science principles.

Who is sponsoring and funding the research?
Canterbury Christ Church University is sponsoring and funding the research.

Who has reviewed the study?
All research in the NHS is looked at by an independent group of people, called a Research Ethics Committee, to protect your interests. This study has been reviewed and given favourable opinion by the Health Research Authority and North of Scotland (2) NHS Research Ethics Committee.

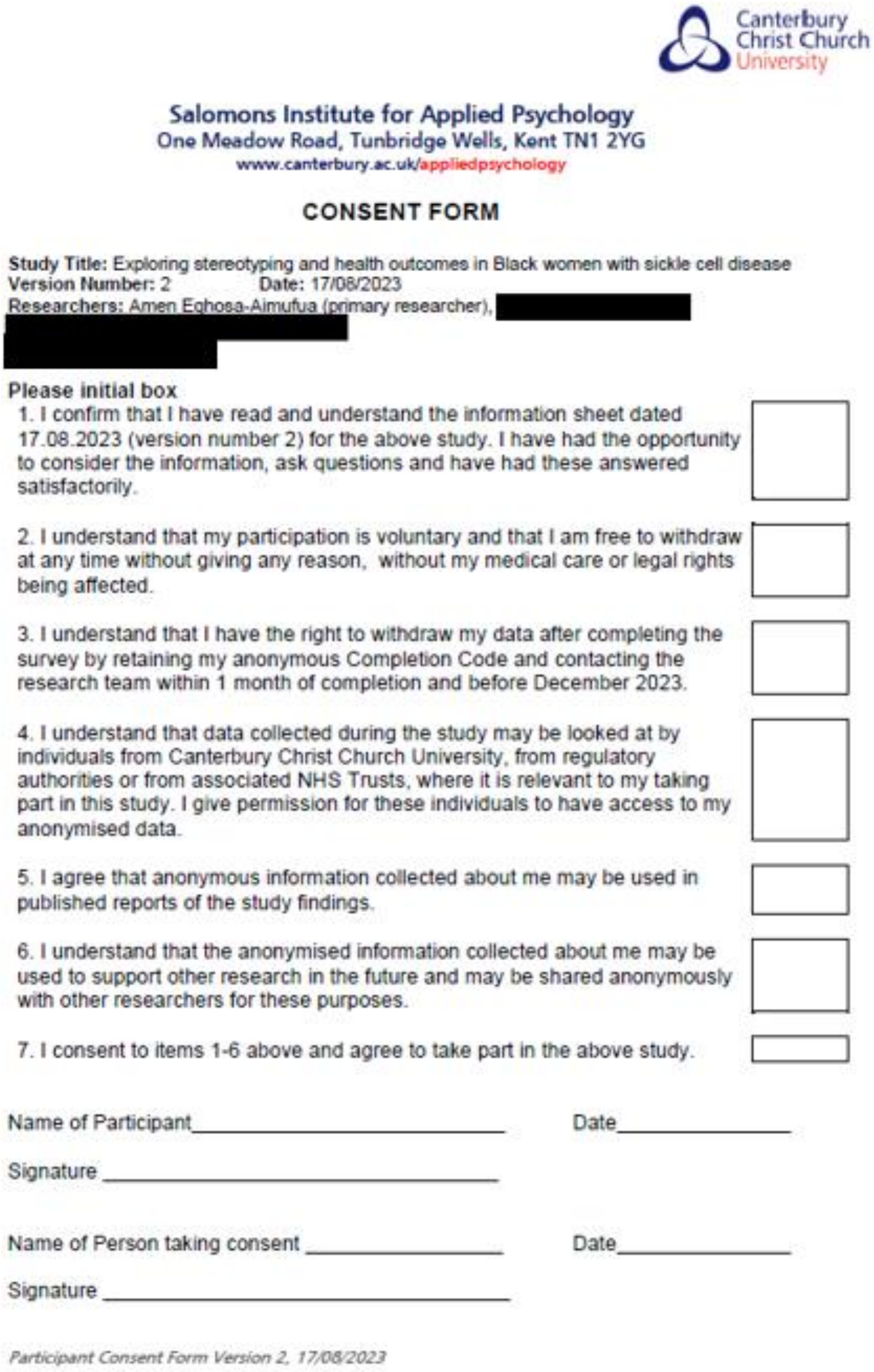
How will we use information about you?
We will need to use information from you for this research project. This information will include your e-mail address. People will use this information to do the research or to check your records to make sure that the research is being done properly. People who do not need to know who you are will not be able to see your contact details. Your data will have a code number instead. We will keep all information about you safe and secure.

Once we have finished the study, we will keep some of the data so we can check the results. We will write our reports in a way that no-one can work out that you took part in the study.

What are your choices about how your information is used?
You can stop being part of the study at any time, without giving a reason, but we will keep information about you that we already have. We need to manage your records in specific ways for the research to be reliable. This means that we won't be able to let you see or change the data we hold about you.

Where can you find out more about how your information is used?
You can find out more about how we use your information:

- at www.hra.nhs.uk/information-about-patients/
- our leaflet available from www.hra.nhs.uk/patientdataandresearch (please note that, contrary to what is said in this leaflet, we will not be accessing any participant's medical records)
- by asking one of the research team
- by sending an email to [redacted]
- by leaving a message for Amen Eghosa-Aimufua[redacted] on a 24-hour voicemail phone line at [redacted] Please leave a contact number so you can be contacted.
- at https://www.canterbury.ac.uk/services/governance-and-legal-services/data-protection which details Canterbury Christ Church University's approach to data protection and provides contact details for the University's Data Protection Officer.



Canterbury Christ Church University

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CONSENT FORM

Study Title: Exploring stereotyping and health outcomes in Black women with sickle cell disease
Version Number: 2 **Date:** 17/08/2023
Researchers: Amen Eghosa-Aimufua (primary researcher), [redacted]
[redacted]

Please initial box

1. I confirm that I have read and understand the information sheet dated 17.08.2023 (version number 2) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. ☐

2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my medical care or legal rights being affected. ☐

3. I understand that I have the right to withdraw my data after completing the survey by retaining my anonymous Completion Code and contacting the research team within 1 month of completion and before December 2023. ☐

4. I understand that data collected during the study may be looked at by individuals from Canterbury Christ Church University, from regulatory authorities or from associated NHS Trusts, where it is relevant to my taking part in this study. I give permission for these individuals to have access to my anonymised data. ☐

5. I agree that anonymous information collected about me may be used in published reports of the study findings. ☐

6. I understand that the anonymised information collected about me may be used to support other research in the future and may be shared anonymously with other researchers for these purposes. ☐

7. I consent to items 1-6 above and agree to take part in the above study. ☐

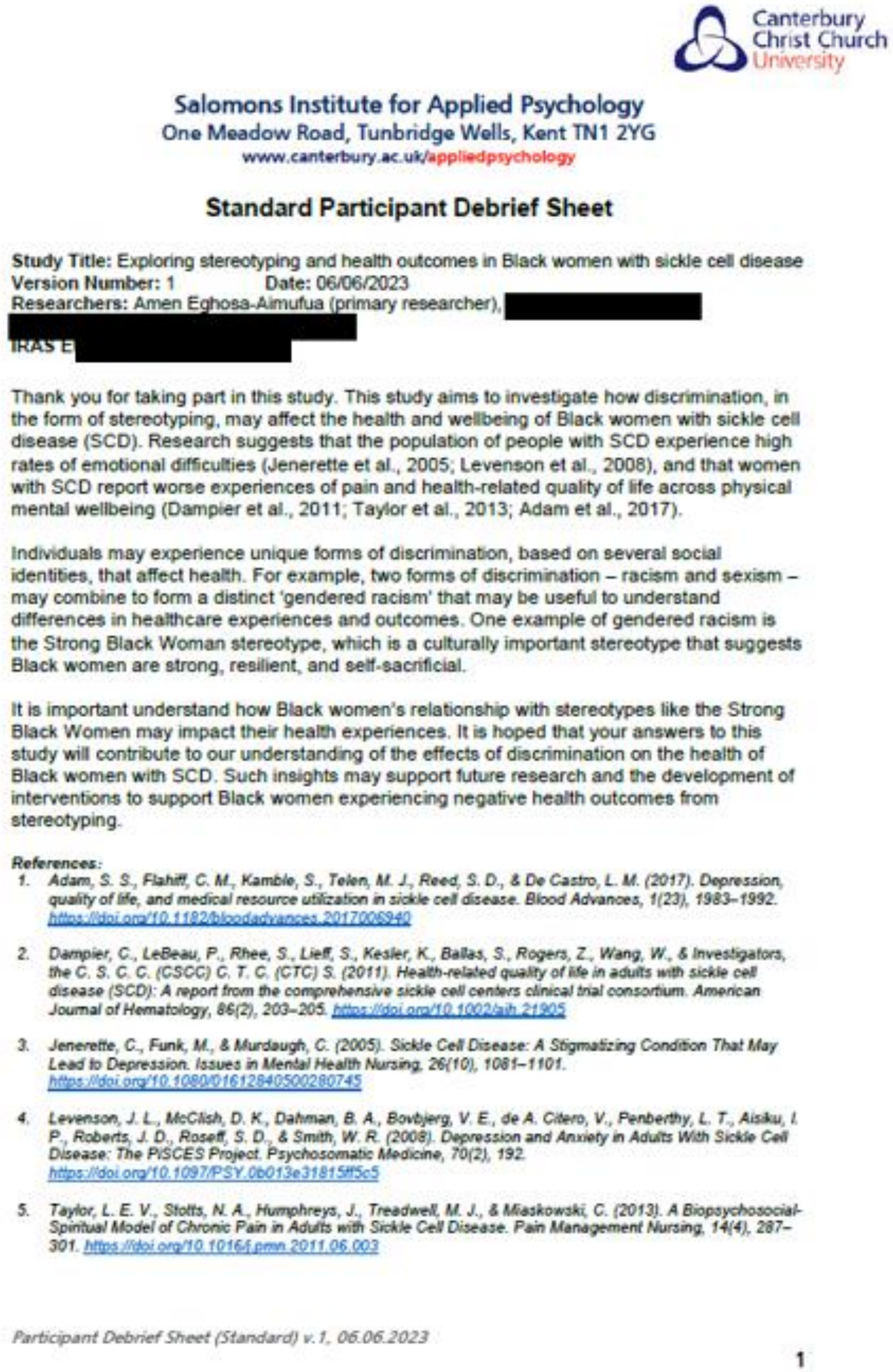
Name of Participant______________________________ Date_______________

Signature ______________________________________

Name of Person taking consent ___________________ Date_______________

Signature ______________________________________

Participant Consent Form Version 2, 17/08/2023



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www.canterbury.ac.uk/appliedpsychology

Standard Participant Debrief Sheet

Study Title: Exploring stereotyping and health outcomes in Black women with sickle cell disease
Version Number: 1 **Date:** 06/06/2023
Researchers: Amen Eghosa-Aimufua (primary researcher), [redacted]
[redacted]
IRAS E[redacted]

Thank you for taking part in this study. This study aims to investigate how discrimination, in the form of stereotyping, may affect the health and wellbeing of Black women with sickle cell disease (SCD). Research suggests that the population of people with SCD experience high rates of emotional difficulties (Jenerette et al., 2005; Levenson et al., 2008), and that women with SCD report worse experiences of pain and health-related quality of life across physical mental wellbeing (Dampier et al., 2011; Taylor et al., 2013; Adam et al., 2017).

Individuals may experience unique forms of discrimination, based on several social identities, that affect health. For example, two forms of discrimination – racism and sexism – may combine to form a distinct 'gendered racism' that may be useful to understand differences in healthcare experiences and outcomes. One example of gendered racism is the Strong Black Woman stereotype, which is a culturally important stereotype that suggests Black women are strong, resilient, and self-sacrificial.

It is important understand how Black women's relationship with stereotypes like the Strong Black Women may impact their health experiences. It is hoped that your answers to this study will contribute to our understanding of the effects of discrimination on the health of Black women with SCD. Such insights may support future research and the development of interventions to support Black women experiencing negative health outcomes from stereotyping.

References:

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2. *Dampier, C., LeBeau, P., Rhee, S., Lieff, S., Kesler, K., Ballas, S., Rogers, Z., Wang, W., & Investigators, the C. S. C. C. (CSCC) C. T. C. (CTC) S. (2011). Health-related quality of life in adults with sickle cell disease (SCD): A report from the comprehensive sickle cell centers clinical trial consortium. American Journal of Hematology, 86(2), 203–205.* https://doi.org/10.1002/ajh.21905

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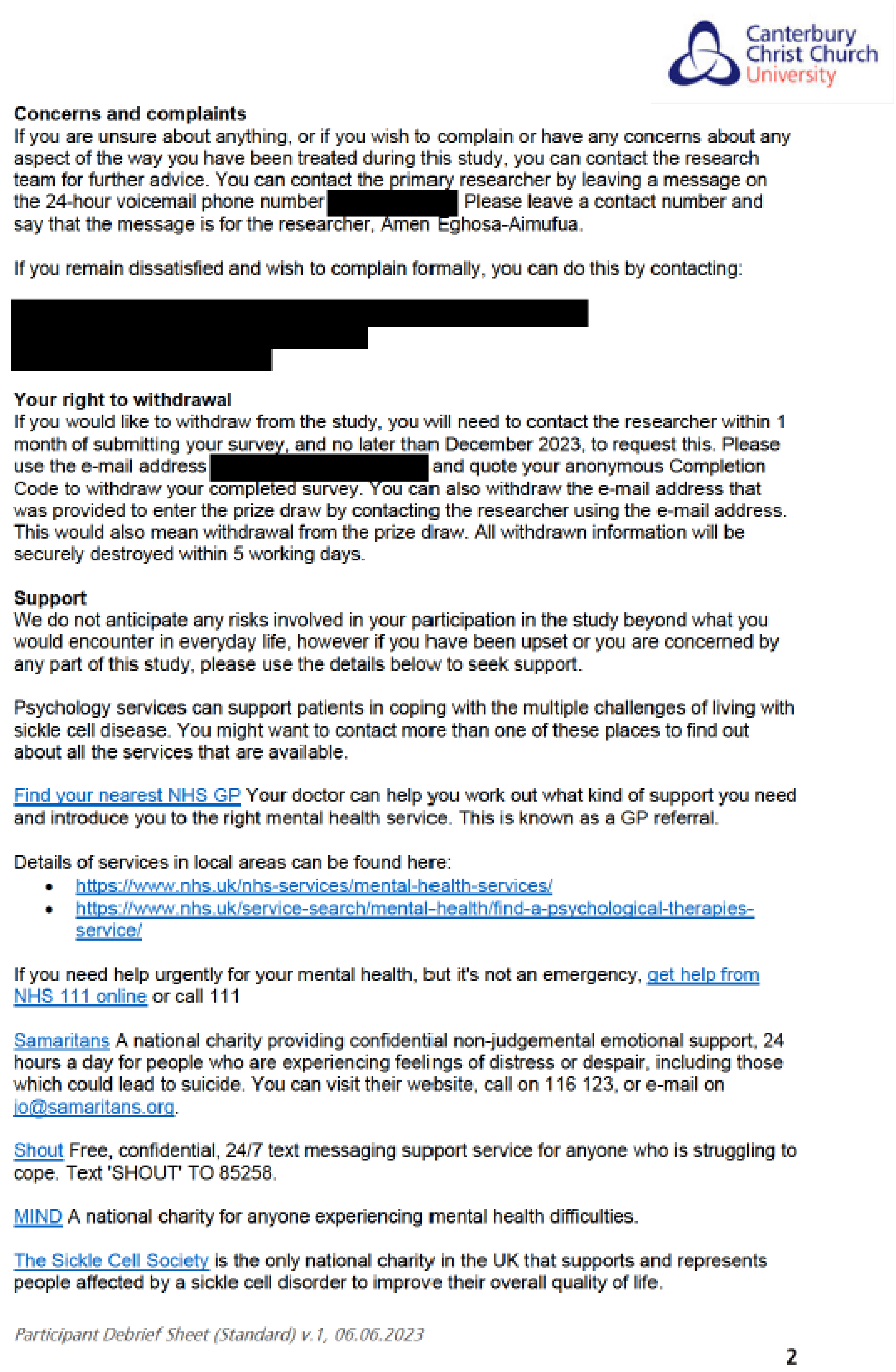
4. *Levenson, J. L., McClish, D. K., Dahman, B. A., Bovbjerg, V. E., de A. Citero, V., Penberthy, L. T., Aisiku, I. P., Roberts, J. D., Roseff, S. D., & Smith, W. R. (2008). Depression and Anxiety in Adults With Sickle Cell Disease: The PiSCES Project. Psychosomatic Medicine, 70(2), 192.* https://doi.org/10.1097/PSY.0b013e31815ff5c5

5. *Taylor, L. E. V., Stotts, N. A., Humphreys, J., Treadwell, M. J., & Miaskowski, C. (2013). A Biopsychosocial-Spiritual Model of Chronic Pain in Adults with Sickle Cell Disease. Pain Management Nursing, 14(4), 287–301.* https://doi.org/10.1016/j.pmn.2011.06.003



Concerns and complaints

If you are unsure about anything, or if you wish to complain or have any concerns about any aspect of the way you have been treated during this study, you can contact the research team for further advice. You can contact the primary researcher by leaving a message on the 24-hour voicemail phone number [redacted] Please leave a contact number and say that the message is for the researcher, Amen Eghosa-Aimufua.

If you remain dissatisfied and wish to complain formally, you can do this by contacting:

[redacted]

Your right to withdrawal

If you would like to withdraw from the study, you will need to contact the researcher within 1 month of submitting your survey, and no later than December 2023, to request this. Please use the e-mail address [redacted] and quote your anonymous Completion Code to withdraw your completed survey. You can also withdraw the e-mail address that was provided to enter the prize draw by contacting the researcher using the e-mail address. This would also mean withdrawal from the prize draw. All withdrawn information will be securely destroyed within 5 working days.

Support

We do not anticipate any risks involved in your participation in the study beyond what you would encounter in everyday life, however if you have been upset or you are concerned by any part of this study, please use the details below to seek support.

Psychology services can support patients in coping with the multiple challenges of living with sickle cell disease. You might want to contact more than one of these places to find out about all the services that are available.

Find your nearest NHS GP Your doctor can help you work out what kind of support you need and introduce you to the right mental health service. This is known as a GP referral.

Details of services in local areas can be found here:

- https://www.nhs.uk/nhs-services/mental-health-services/
- https://www.nhs.uk/service-search/mental-health/find-a-psychological-therapies-service/

If you need help urgently for your mental health, but it's not an emergency, get help from NHS 111 online or call 111

Samaritans A national charity providing confidential non-judgemental emotional support, 24 hours a day for people who are experiencing feelings of distress or despair, including those which could lead to suicide. You can visit their website, call on 116 123, or e-mail on jo@samaritans.org.

Shout Free, confidential, 24/7 text messaging support service for anyone who is struggling to cope. Text 'SHOUT' TO 85258.

MIND A national charity for anyone experiencing mental health difficulties.

The Sickle Cell Society is the only national charity in the UK that supports and represents people affected by a sickle cell disorder to improve their overall quality of life.

The Essenelle Foundation A Mental Health Charity supporting people with Sickle Cell and their families

To Better Days is a resource website for information and support with chronic pain.

The Black, African and Asian Therapy Network Home of the largest community of Counsellors and Psychotherapists of Black, African, Asian and Caribbean Heritage in the UK.

Equality and Human Rights Commission Promoting equality and human rights by providing advice and guidance.

Community Legal Advice Free, confidential, and independent legal advice for residents of England and Wales.

Law Centres Not-for-profit legal practices providing free legal advice and representation to disadvantaged people.

Citizens Advice Bureau Confidential advice online, over the phone, and in person, for free.

The Monitoring Group An anti-racist grassroots group supporting people through casework, campaigns, and research.

Stop The Hate A leading anti-hate and anti-discrimination organisation for corporate, statutory, and community sectors.

Appendix D: Giscombé Superwoman Schema Questionnaire (G-SWS-Q).

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Appendix E: ASCQ-Me v2.0 Emotional Impact – Short Form

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Appendix F: ASCQ-Me v2.0 Pain Impact – Short Form

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Appendix G: ASCQ-Me v2.0 Stiffness Impact – Short Form

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Appendix H: ASCQ-Me v1.0 Fatigue – Short Form 7a

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Appendix I: ASCQ-Me v2.0 Sickle Cell Disease – Medical History Checklist

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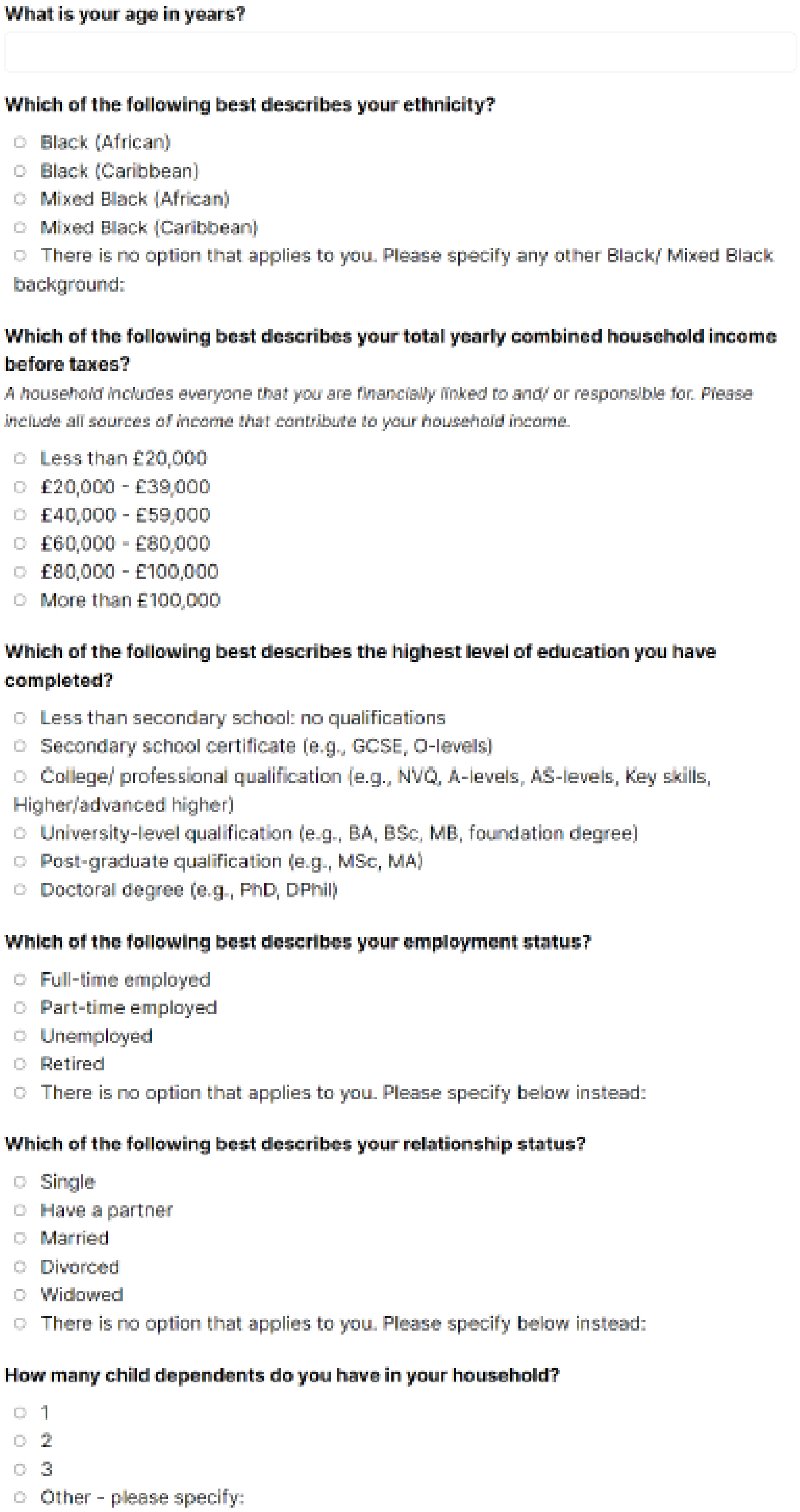
Appendix J: Study demographic questionnaire



What is your age in years?

Which of the following best describes your ethnicity?

○ Black (African)
○ Black (Caribbean)
○ Mixed Black (African)
○ Mixed Black (Caribbean)
○ There is no option that applies to you. Please specify any other Black/ Mixed Black background:

Which of the following best describes your total yearly combined household income before taxes?

A household includes everyone that you are financially linked to and/ or responsible for. Please include all sources of income that contribute to your household income.

○ Less than £20,000
○ £20,000 - £39,000
○ £40,000 - £59,000
○ £60,000 - £80,000
○ £80,000 - £100,000
○ More than £100,000

Which of the following best describes the highest level of education you have completed?

○ Less than secondary school: no qualifications
○ Secondary school certificate (e.g., GCSE, O-levels)
○ College/ professional qualification (e.g., NVQ, A-levels, AS-levels, Key skills, Higher/advanced higher)
○ University-level qualification (e.g., BA, BSc, MB, foundation degree)
○ Post-graduate qualification (e.g., MSc, MA)
○ Doctoral degree (e.g., PhD, DPhil)

Which of the following best describes your employment status?

○ Full-time employed
○ Part-time employed
○ Unemployed
○ Retired
○ There is no option that applies to you. Please specify below instead:

Which of the following best describes your relationship status?

○ Single
○ Have a partner
○ Married
○ Divorced
○ Widowed
○ There is no option that applies to you. Please specify below instead:

How many child dependents do you have in your household?

○ 1
○ 2
○ 3
○ Other - please specify:

Appendix K: End of Study Form

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Appendix L: Summary Report for Ethics Panel and R&D Committee

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Appendix M: Endy of Study Report for Participants

Canterbury
Christ Church
University

Exploring Stereotyping and Health Outcomes in Black Women with Sickle Cell Disease

STUDY SUMMARY REPORT

Thank you for your interest in this study. The study is now complete, and this document has been provided to inform you of the findings and the next steps for the project.

Why did we investigate this?

Sickle cell disease (SCD) is an inherited blood condition that causes pain and other serious health complications. Research suggests that people with SCD report severely compromised health-related quality of life (HRQoL) in comparison to the general population and other chronic diseases. The relationship between health experience and wellbeing is complex, but it is thought that racism frequently interacts with, and exacerbates, other sources of health-related stigma in SCD, to impact wellbeing.

For Black women, both racism and sexism have already been separately linked to poorer health outcomes, for example, higher psychological distress. However, this approach may mask the unique experience that exists at the intersection of race and gender. As such, research has increasingly adopted an intersectional approach to explore the combined impact of race and gender. The Strong Black Woman stereotype (SBWS) is a pervasive stereotype unique to Black women that may impact health outcomes in Black women.

As research suggests that others' attitudes impact how an individual copes with a medical condition and shapes their illness-related behaviours, it is important understand how Black women's relationship with stereotypes such as the SBWS may support our understanding of health inequalities. Thus, the primary aim of the proposed study is to explore if, and to what degree, the SBWS is associated with HRQoL in Black women SCD.

What was our approach?

Data from an online survey was collected. All data were anonymised before analyses took place. Different statistical approaches were used, which allowed us to see if there were any relationships between endorsing the SBW stereotype and mental and physical wellbeing (answers to the question “What is the contribution of identity and discrimination to health-related outcomes in Black women with sickle cell disease (SCD?”) In total information from 48 participants was collected and analysed as part of the study.

What were the main findings and what might this mean?

We found that women who endorsed higher levels of the Strong Black Woman stereotype were more likely to have poorer emotional wellbeing related to their sickle cell disease. This means they were more likely to experience negative emotions (such as worry, depression, and loneliness) which impacted their wellbeing. We also found that Black women who engaged with suppressing emotions (keeping feelings to yourself) more were more likely to experience poorer quality of life in terms of the impact of sickle cell disease on their emotional wellbeing. These findings were evident even after the severity of a person’s SCD was taken into account.

We thought we would find that Black women who endorsed higher levels of the Strong Black Woman stereotype would also experience lower quality of life in the impact of their sickle cell disease on their experiences of pain, fatigue, and stiffness. However, we did not find any evidence that this was the case.

These findings show that experiences of discrimination, such as pressure to uphold a stereotype, can have a negative impact on mental wellbeing. It also highlights the importance of supporting Black women to speak about their difficulties. This information will help practitioners pay closer attention to the impact of discriminatory experiences and pressures on the health of Black women with sickle cell disease. It is hoped that study findings will support to inform and make change to current health provision. And generate more effective mental health support for Black women.

What will we do next?

The complete research paper has been submitted as part of the requirements for a doctoral degree. Following assessment and approval, the research team will refine the paper before submitting it for publication. It is anticipated that the finalised research paper will be available in early to mid-2025. If you would like, we can notify you once the research is published. Please use the contact details below.

We intend to share the findings of this research with clinicians, researchers, and community groups to enhance our understanding of wellbeing among Black women with sickle cell disease. We hope that this summary has been informative, and we extend our best wishes for the future.

Amen Eghosa-Aimufua, Trainee Clinical Psychologist **E-mail: REDACTED**

Appendix N: Author Guideline Notes for Ethnicity & Health

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