

## Study Protocol

### Title

Social determinants of breast and prostate cancers in populations living in the Caribbean: a systematic review and meta-analysis.

### Background

Each year, the World Health Organization and International Agency for Research on Cancer supports the Union for International Cancer Control to promote ways to ease the global burden of cancer.(1)

Approximately 30% of cancers can be prevented when taking into consideration risk factors such as diet or physical inactivity, which are themselves influenced by social determinants of health.(2,3) To date, there has been no published systematic review of research conducted in the Caribbean that examines the social determinants of various types of cancers. Breast and prostate cancers are the leading causes of death from cancers in the Caribbean, and for this reason, a systematic review will be done on each cancers.(4,5)

Among females in the Caribbean, breast cancer was the eighth leading cause of death, accounting for the greatest proportion deaths and disability adjusted life years (DALYs) among all cancers in 2013.(4,5) Additionally, breast cancer attributed for 1.4 million DALYs in 2012.(6) Age-standardized mortality rates in the Caribbean have increased by 37% to 20.6 per 100,000 since 1990, in contrast to the decrease seen among industrialised countries.(4,5) There have been shown to be differences across socioeconomic status in cancer incidence and mortality.(7,8)

In 2010, prostate cancer accounted for about one-quarter of all male cancer deaths in the Caribbean, making it the leading cause of male cancer deaths and the fifth leading cause of male deaths overall. (4,5) Of the top ten causes of males mortality in the Caribbean in 1990, prostate cancer was estimated to have the highest median percent increase to 2010.(4,5) Age-standardized mortality rates from prostate cancer among Caribbean males were estimated to be 39 per 100,000 in 2010, around twice the

mortality seen in the USA and UK.(4,5) Age-standardised mortality rates in the Caribbean have increased since 1990, in contrast to the decrease seen among industrialised countries.(4,5)

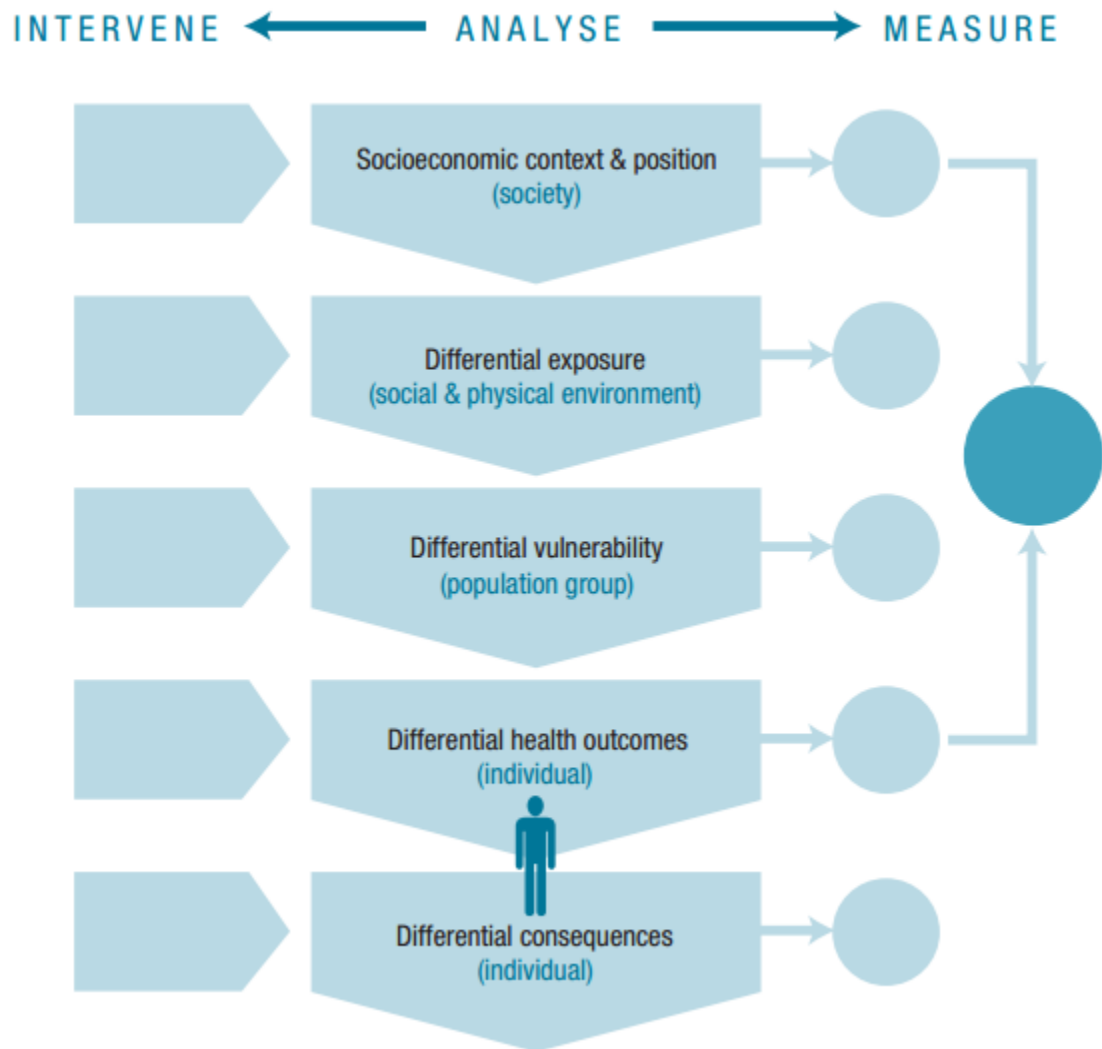
In spite of this burden, it is still not clear how social determinants of health may affect prostate and breast cancer risk factors, occurrence, and outcomes in the Caribbean. Exploring the social determinants of health that may be associated with breast and prostate cancers will aid in responding strategically to the increasing burden of these cancers in the Caribbean.

## Systematic Review Framework

The 2011 World Conference on Social Determinants of Health and its subsequent Rio Political Declaration on Social Determinants of Health rightfully recognize the critical role that social determinants play in the distribution of noncommunicable diseases such as cancer, as well as government commitment to improving sustainable development and health equity using the social determinants approach.(2) The associated challenge of identifying and addressing health inequities between populations and groups, such that the World Health Organization's Global Action Plan on Prevention and Control of Noncommunicable Diseases 2013-2020 can be utilized.(2,9) Despite the heavy burden of cancer on regional morbidity rates, there is no published systematic review of research conducted in the Caribbean that examines the social determinants of different types of cancers. Such a review can inform regional preventive strategies for cancers and their complications, and also identify areas for further research.

The planning of this systematic review was guided by the analytical framework used to examine the social determinants of specific conditions by the WHO Commission on the Social Determinants of Health.(2) The framework has five levels and three dimensions, as shown in Figure 1 below. The Commission's starting point to using this framework was to examine differential health outcomes by markers of social and economic status (such as gender, ethnicity, education, and occupation), and then to look upstream to investigate where these differences originate. After analyzing the determinants in this way, contributors to the WHO Commission then examined potential interventions to address the determinants, and suggested indicators to be measured in order to assess the success of those interventions (the 'intervene' and 'measure' dimensions in Figure 1).

Figure 1: Analytical Framework for Priority Public Health Conditions used by the WHO Commission on Social Determinants.(2)



Reviewing the literature across the five levels and three dimensions is beyond the scope of a single review. Thus, our aim of this review is to provide a solid foundation for further work on health inequities of cancer in the Caribbean by reviewing the social distribution of the prevalence and incidence, risk factors ('vulnerabilities'), and complications ('consequences') of cancer.

There is a clear rationale underpinning the chosen inclusion criteria for this review. The top male and female cancer within the Caribbean, according to the Global Burden of Disease study mortality rates, were selected for this review.(4) All ages are selected for the population to keep the review as broad as

possible. A sample size limit of >50 participants or respondents is used as it is expected that studies with a small sample size will be less likely to be representative of the population. The study types included were all observational studies as the review is aimed at assessing the distribution, risk factors, and adverse outcomes of cancers, rather than interventions. The risk factors, frequency measures, and outcome measures to be assessed are listed in Table 1. They were selected specifically to ensure that the items were broadly scoped to capture as many studies as possible. Eligible risk factors were identified using three compendiums of evidence-based information: The Global Burden of Disease Consortium, UpToDate, and Cancer Epidemiology and Control.(10–12) The social determinants selected for the inclusion criteria are also listed in Table 1, and were guided by an extension of the PRISMA statement for reporting systematic reviews with a focus on health equity. (13)

## Review Question

**Primary Question:** What is the distribution, by known social determinants of health, of the risk factors, frequency, and adverse outcomes of breast cancer and prostate cancer in populations living in the Caribbean?

**Secondary Question:** What are the implications of these distributions for reducing and preventing further health inequities within the Caribbean region?

## Methods

### Inclusion & Exclusion Criteria

#### Inclusion Criteria:

- Participants/respondents resident in the Caribbean region, inclusive of the following countries: Anguilla, Antigua and Barbuda, Aruba/Bonaire/Curacao, The Bahamas, Barbados, St. Bart's, Belize, Cayman Islands, Cuba, Dominica, Dominican Republic, St. Eustatius, French Guiana, Grenada, Guadeloupe, Guyana, Haiti, Jamaica, St. Kitts and Nevis, St. Lucia, St. Martin, St. Maarten, Martinique, Montserrat, Puerto Rico, St. Vincent and The Grenadines, Saba, Suriname, Trinidad & Tobago, Turks & Caicos, and the Virgin Islands (US and British)
- Observational studies, both published and unpublished if captured in the electronic search.
- Studies which define cancer as diagnosed through any cancer screening tool.

- Sample size  $\geq 50$ .
- Age of study participants: all.
- Studies describing the distribution of  $\geq 1$  factors in rows (A), (B) or (C) in the Table 1 below by  $\geq 1$  social factors in row (D).

Table 1: Key variables to be abstracted and collected.

<b>Group</b>	<b>Factor Categories</b>	<b>Factors Being Examined</b>
<b>A</b>	Disease measurements	incidence, prevalence
<b>B</b>	Risk factors	<b>Breast cancer:</b> alcohol intake; high dietary sugar; overweight/obesity; physical inactivity; therapeutic ionizing radiation; late age at first pregnancy; low parity; low/no breastfeeding <b>Prostate cancer:</b> high dietary calcium
<b>C</b>	Outcomes	grade, stage, recurrence, survival, mortality (cancer-specific, all-cause)
<b>D</b>	Social distribution	age*, race/ethnicity, language, education, occupation, income/wealth, culture, religion, social capital, social support, residence, infrastructure, healthcare systems

\* - 'Age' is not applied to BMI as a risk factor, disease measurements or outcomes as it is biologically inherent to these variables.

### Exclusion Criteria:

- Intervention studies, narrative review studies, commentaries, case series, qualitative studies and single case reports.
- Studies in which describe the relationships of interest within sub-populations that are not representative of the general population (eg: patients in renal failure).
- Literature on Caribbean diaspora (as opposed to populations living within the Caribbean).
- Literature that is written in any other language than English, Dutch, Spanish and French.
- Non-human studies.
- Sample size <50.

### Search Strategy

The search strategies for breast cancer and prostate cancer according to the specifications of the Pubmed search engine are detailed in Appendix A; these will be adapted as necessary to the syntax of other search engines.

- MEDLINE (via Pubmed): National Library of Medicine's journal citation database of biomedical and life sciences journal articles.(14)
- EMBASE (via Ovid): Elsevier's international database with in depth coverage of pharmacology, pharmaceutical science, clinical research, basic biomedical science, veterinary science and extensive allied health topics.(15)
- SciELO: Electronic library covering a selected collection of Brazilian scientific journals, being developed by FAPESP - Fundação de Amparo à Pesquisa do Estado de São Paulo, in partnership with BIREME - the Latin American and Caribbean Center on Health Sciences Information.(16)
- CINAHL (via EBSCO): EBSCO's database indexing of the top nursing and allied health literature, covering nursing, biomedicine, health sciences librarianship, alternative/complementary medicine, consumer health and seventeen allied health disciplines.(17)
- CUMED (via WHO Virtual Health Library): Bibliographic database developed by the National Medical Library and cooperating institutions of the national network of health information with records from Cuban medical and allied sciences published in Cuba or abroad.(18)

- LILACS (via WHO Virtual Health Library): Database of the Latin American and Caribbean of Health Sciences Information System.(18)
- IBECS (via WHO Virtual Health Library): Biographic Index on Health Sciences from Spain, a potential source of Spanish language publications from the Caribbean.(18)

The publication dates for the full review span a 10 year period - from January 1st, 2004 through December 31st, 2014. This period was chosen as it sandwiches the 2007 Port of Spain Declaration, and studies published more than 10 year ago were considered too old to inform current policy on social determinants. The search terms for the social determinants are guided by the extension of the PRISMA statement for reporting systematic reviews with a focus on health equity.(19) The statement recommends using the PROGRESS-Plus checklist, which includes place of residence, race/ethnicity/culture/language, occupation, gender/sex, religion, education, socio-economic status, social capital and any other possible factors. All other search terms were conceptualized through thorough broad research on cancer studies to identify key indicators. Age was examined for risk factors only, due to its biological association with cancer frequency and outcomes.

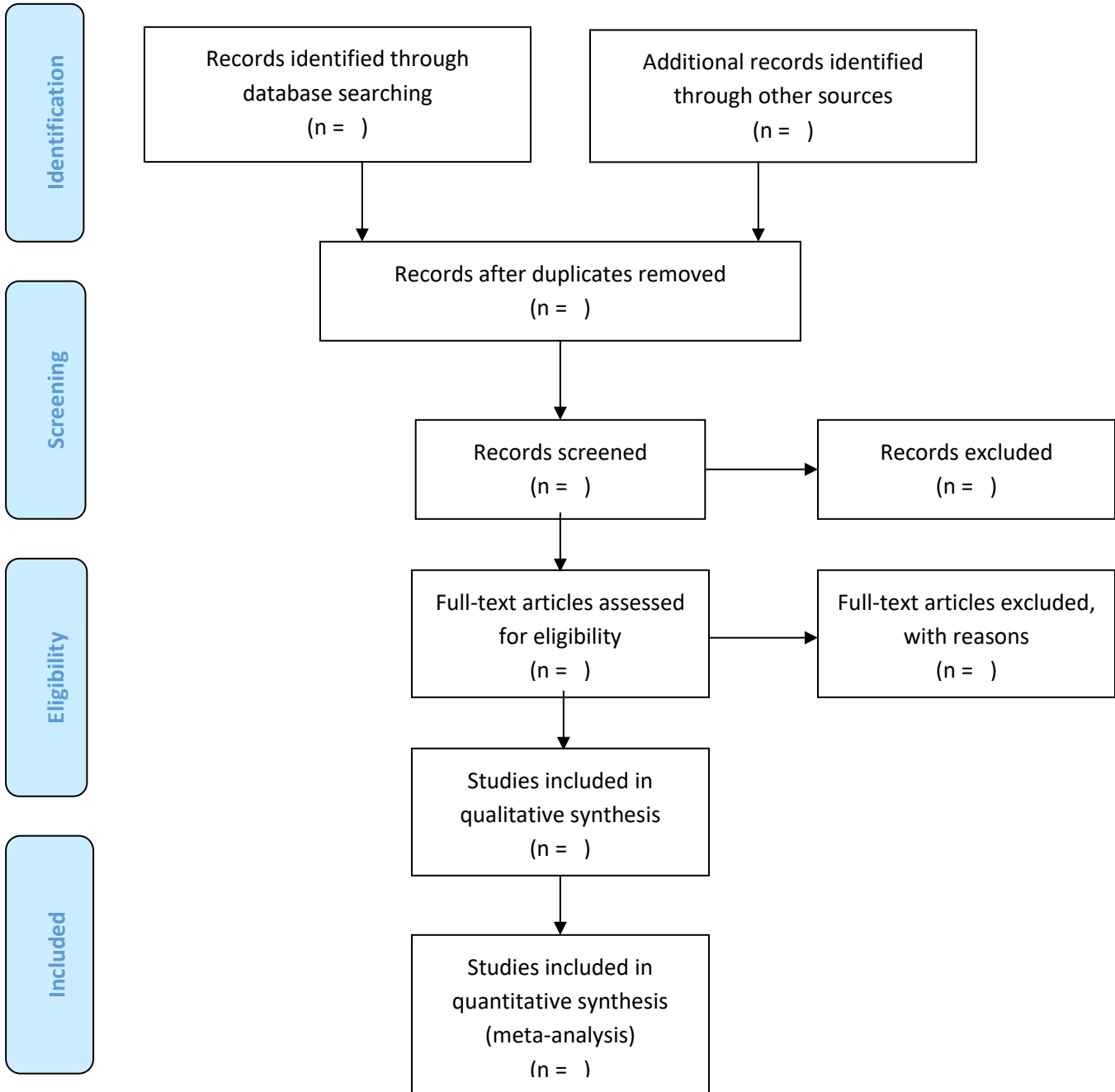
## Study Selection

All studies selected for the systematic review will be downloaded into Endnote reference manager.(20) Study selection will be conducted in two steps by two reviewers:

1. Initial screening of titles and abstracts against the inclusion criteria to identify potentially relevant studies.
2. Secondary screening of the full-text studies identified as potentially relevant in the initial screening.

All studies will be reviewed by two reviewers. In instances where Step 1 is impossible to complete with only the title and abstract, the full-text is to be retrieved and screened as stated in Step 2. In instances where there is still poor clarity on whether to include a study, the study will be forwarded to an independent third party for consensus. The numbers of articles reviewed, selected, and excluded at each stage will be documented according to the flowchart depicted below in Figure 2.

Figure 2: Literature screening process according to the 2009 PRISMA flowchart template.(21)





## Data Extraction

Studies that pass both steps of the study selection process will be eligible for data extraction. Each full-text study will be independently data-extracted by two reviewers. Any discordance in data extraction will also be resolved by a third party reviewer. A data extraction form has been created in RedCap software in order to manage the data.(22) This form is designed to extract key study characteristics and findings relevant to the primary research question. Three sample forms illustrating our double data extraction differences for third party review are given in Appendix B. It has also been designed to enable an assessment of risk of bias inherent in each study (See Appendix C for details on our risk of bias assessment). The content of the data abstraction form has been guided by the STROBE statement on reporting observational epidemiology and by the PRISMA statement on systematic reviews concerning health equity.(13,23)

Broadly, data items extracted from the included articles fall into one of the following information groups: basic study details (article title, author, publication year, study design, country/countries of data collection etc); risk factor details; disease details; adverse outcome details. The social determinants examined, tools/units of measurement, statistical techniques employed, results, confounders controlled, and assessment of risk of bias were depicted for each group. Should a study not have sufficient information required to fill out the data abstraction form to completion, that study will still be included in the review, but categorized as such.

## Quality Assessment

Risk of bias will be assessed according a tool adapted from STROBE and Cochrane ACROBAT-NRSi guidelines (see Appendix C).(23,24) Bias is to be assessed in 5 domains at the relationship level: confounding (might a relationship be affected by an unmeasured confounder?), participant selection (is the sample representative of the target population?), missing data (is the data reasonably complete?), outcome measurement (is a social determinant/disease endpoint appropriately measured?), selective reporting (is a relationship selectively reported?). Studies will be classified as having serious, moderate, low, or unclear risk of bias. Two reviewers will make an independent judgement on the overall risk of bias of each included article, considering each domain as equally important and the likely direction and

magnitude of the bias from each domain. Discrepancies will be discussed by the two reviewers to achieve consensus.

## Data Analysis

The review is planned as a narrative synthesis of evidence, with meta-analysis of quantitative evidence restricted to studies classified as having a low and moderate risk of bias. Sensitivity analyses will be conducted with any relevant high-risk articles.

For the narrative synthesis, key study-level information will be summarized for all studies. Variable-level information will be summarized, focusing separately on associations between social determinants and risk factors, between social determinants and cancer frequency, then between social determinants and cancer outcomes. To summarize quantitative information, a random-effects meta-analysis will be used to recognize for the anticipated heterogeneity between studies. The I-squared value will be reported to quantify heterogeneity.<sup>(24)</sup> Rate ratios will be used to report social determinant differences in cancer incidence or mortality. Odds ratios will be used to report social determinant differences in cancer prevalence. Hazard ratios will be used to report social determinant differences in cancer recurrence and survival. Cancer grade and stage will be converted to dichotomous data and reported using odds ratios.

## Plans for Dissemination

It is expected that the findings from the scoping review will be submitted for peer-reviewed publication. In addition, findings will be shared at Caribbean regional meetings such as the Caribbean Health Research Council's annual meeting, as well as any relevant international Conferences.

## References

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## Appendices

### Appendix A – Search Strategies for Pubmed Search Engine

Notes: Words that could be author names were restricted to non-author fields. Truncation (\*) was not used in cases where the non-truncated word created a broader search because it triggers a MeSH term and automatically includes the pluralized form. Otherwise, both the truncated and non-truncated MeSH terms were used. Limits used: Human-only, date range = January 1, 2004 – December 31, 2014.

#### **Breast Cancer**

*(Caribbean OR West Indies OR Leeward OR Windward OR Antilles OR Anguilla OR Antigua OR Aruba OR Barbuda OR Bahamas OR Barbados OR Barthelemy OR “St. Bartholomew” OR “Saint Bartholomew” OR Barts OR Belize OR Bermuda OR Bonaire OR Cayman OR Croix OR Cuba OR Curacao OR Dominica OR “Dominican Republic” OR Eustatius OR “Santo Domingo” OR “Saint Domingue” OR “St. Domingue” OR Grenada OR Guadeloupe OR Guyana OR Haiti OR Hispaniola OR Jamaica OR “St. John” OR “Saint John” OR “St. Thomas” OR “Saint Thomas” OR “St. Vincent” OR “Saint Vincent” OR “St. Martin” OR “Saint Martin” OR “St. Maarten” OR “Saint Maarten” OR Martinique[tw] OR Martinique[AD] OR Martinique [TA] OR Martinique [LID] OR Martinique [PL] OR Martinique [PUBN] OR “St. Nevis” OR “Saint Nevis” OR “St. Christopher and Nevis” OR “Saint Christopher and Nevis” OR “St. Lucia” OR “Saint Lucia” OR Kitts OR Montserrat OR “Puerto Rico” OR Grenadines OR “Virgin Islands” OR Saba OR Suriname OR Trinidad OR Tobago OR Tortola) AND (age OR gender OR education OR educat\* OR income OR wealth OR ethnic OR ethnic\* OR race OR culture OR language OR occupation OR religion OR social class OR socioeconomic OR health social determinants OR social determinant\* OR social capital OR residence OR medical geography OR health service OR health service\* OR health equity OR disparit\* OR medical sociology OR prejudice OR health insurance OR health gradient OR health gap OR vulnerable populations OR continental population groups OR Arawak\* OR Amerindian\* OR carib OR caribs OR taino\* OR ethnic groups OR social conditions OR urban OR rural OR urban health OR urban population OR rural health OR rural population OR social position OR poverty OR wealth OR rich[tw] OR poor OR social support OR discriminat\* OR differenti\* OR globaliz\* OR globalis\* OR urbanization OR urbaniz\* OR urbanis\* OR westerniz\* OR westernis\*) AND (“Breast Neoplasms” [MeSH] OR ((breast OR ductal OR lobular OR (mammary AND gland)) AND (cancer OR sarcoma OR carcinoma OR tumor OR neoplasm OR mucosa associated lymphoid tissue OR MALT OR stage OR stages OR staging OR grade OR grades OR grading OR recurren\* OR remission OR (year AND survival))) OR (Alcohol OR drinking OR Bmi OR body mass index OR overweight OR obesity OR obes\* OR sugar OR sweet\* OR (Physical\* AND (active\* OR activi\* OR inactiv\*)) OR motor activity OR exercise OR radiation OR x-ray OR (age AND first AND (pregnancy OR pregnant OR birth)) OR maternal age OR Parity OR parous OR (Number AND ( children OR live births OR babies OR delivered OR deliveries)) OR breastfeed OR breastfeeding OR breastfed))*

## **Prostate Cancer**

*(Caribbean OR West Indies OR Leeward OR Windward OR Antilles OR Anguilla OR Antigua OR Aruba OR Barbuda OR Bahamas OR Barbados OR Barthelemy OR "St. Bartholomew" OR "Saint Bartholomew" OR Barts OR Belize OR Bermuda OR Bonaire OR Cayman OR Croix OR Cuba OR Curacao OR Dominica OR "Dominican Republic" OR Eustatius OR "Santo Domingo" OR "Saint Domingue" OR "St. Domingue" OR Grenada OR Guadeloupe OR Guyana OR Haiti OR Hispaniola OR Jamaica OR "St. John" OR "Saint John" OR "St. Thomas" OR "Saint Thomas" OR "St. Vincent" OR "Saint Vincent" OR "St. Martin" OR "Saint Martin" OR "St. Maarten" OR "Saint Maarten" OR Martinique[tw] OR Martinique[AD] OR Martinique [TA] OR Martinique [LID] OR Martinique [PL] OR Martinique [PUBN] OR "St. Nevis" OR "Saint Nevis" OR "St. Christopher and Nevis" OR "Saint Christopher and Nevis" OR "St. Lucia" OR "Saint Lucia" OR Kitts OR Montserrat OR "Puerto Rico" OR Grenadines OR "Virgin Islands" OR Saba OR Suriname OR Trinidad OR Tobago OR Tortola) AND (age OR gender OR education OR educat\* OR income OR wealth OR ethnic OR ethnic\* OR race OR culture OR language OR occupation OR religion OR social class OR socioeconomic OR health social determinants OR social determinant\* OR social capital OR residence OR medical geography OR health service OR health service\* OR health equity OR disparit\* OR medical sociology OR prejudice OR health insurance OR health gradient OR health gap OR vulnerable populations OR continental population groups OR Arawak\* OR Amerindian\* OR carib OR caribs OR taino\* OR ethnic groups OR social conditions OR urban OR rural OR urban health OR urban population OR rural health OR rural population OR social position OR poverty OR wealth OR rich[tw] OR poor OR social support OR discriminat\* OR differenti\* OR globaliz\* OR globalis\* OR urbanization OR urbaniz\* OR urbanis\* OR westerniz\* OR westernis\*) AND ("Prostate neoplasms" [MeSH] ((prostate OR prostatic) AND (cancer OR sarcoma OR carcinoma OR tumor OR neoplasm OR mucosa associated lymphoid tissue OR MALT OR stage OR stages OR staging OR grade OR grades OR grading OR recurren\* OR remission OR (year AND survival)))) OR (calcium OR milk OR dairy))*

## Appendix B – Redcap Data Extraction Form Merge Files

Differences were found between the two records named **BC 1387--1** and **BC 1387--2**.

The table below compares the two records named **BC 1387--1** and **BC 1387--2**. Only the fields that have differing values are listed below. If you need to correct or change the value of one of the records below, simply click on the data displayed in red, and it will take you to that form for that particular record.

### MERGE THEM?

If you wish to merge selected values from the two records below into a NEW third record, you may [click here to merge them](#).

Label ( <i>field name</i> )	Form Name	Record ID	
		BC 1387--1	BC 1387--2
Abstractor ( <i>abstractor</i> )	Basic Data Abstraction	██████	██████
Publication year ( <i>pub_year</i> )	Basic Data Abstraction	2014	2013
Study size criteria ( <i>crit_size</i> )	Basic Data Abstraction	2689	131
Study design criteria ( <i>study_des</i> )	Basic Data Abstraction	Cross-sectional (5)	Registry-based study (9)
Study base		Unchecked (0)	Checked (1)

[http://secure.vhru.org/redcap/redcap\\_v6.0.2/DataComparisonTool/index.php?pid=18](http://secure.vhru.org/redcap/redcap_v6.0.2/DataComparisonTool/index.php?pid=18)

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(Choice = <b>population-based</b> ) ( <i>study_base</i> » <i>study_base__1</i> )	Basic Data Abstraction		
Study base (Choice = <b>health-facility based</b> ) ( <i>study_base</i> » <i>study_base__3</i> )	Basic Data Abstraction	Checked (1)	Unchecked (0)
Breast cancer incidence_SD (Choice = <b>marital status</b> ) ( <i>bri_sd1</i> » <i>bri_sd1__15</i> )	Disease data abstraction	Checked (1)	Unchecked (0)
State number of social determinants described by this disease. ( <i>brino_sd</i> )	Disease data abstraction	2	1
Was social determinant1 measured objectively or subjectively (eg. by questionnaire/self-report)? ( <i>brisd1_obj</i> )	Disease data abstraction	Subjectively (2)	Both (3)

State the categories of social determinant1 ( <i>brisd1_categ</i> )	Disease data abstraction	African ancestry, white, East Indian, mixed, Asian and other, Missing	African, White, East Indian, Mixed, Asian and other, Missing
Describe measurement tool used to determine the presence of the social determinant1 ( <i>brisd1_meas</i> )	Disease data abstraction	A five-member data collection team from the National Institute of Higher Education, Research, Science and Technology (NIHERST) extracted data from patient registration forms at Trinidad and Tobago Cancer Society.	Researchers extracted data from the mammography reports, biopsy reports and patient registration forms at TTCS
Was social determinant2 measured objectively or subjectively (eg. by questionnaire/self-report)? ( <i>brisd2_obj</i> )	Disease data abstraction	Subjectively (2)	
Was social determinant2 measured as a continuous or categorical variable? ( <i>brisd2_conorcat</i> )	Disease data abstraction	Categorical (2)	
State the categories of social determinant2	Disease data abstraction	Single/separated/widowed/divorced, married/common law, missing	

[http://secure.vhru.org/redcap/redcap\\_v6.0.2/DataComparisonTool/index.php?pid=18](http://secure.vhru.org/redcap/redcap_v6.0.2/DataComparisonTool/index.php?pid=18)

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( <i>brisd2_categ</i> )			
Describe measurement tool used to determine the presence of the social determinant2 ( <i>brisd2_meas</i> )	Disease data abstraction	A five-member data collection team from the National Institute of Higher Education, Research, Science and Technology (NIHERST) extracted data from patient registration forms at Trinidad and Tobago Cancer Society.	
Describe measurement tool used to determine breast cancer incidence ( <i>bri_measure</i> )	Disease data abstraction	Mammography measurements were performed at TTCS by a three-member team of radiologists using Siemens MAMMOMAT 3000 Nova equipment acquired by the TTCS in 2007. The digitized images were read using the Siemens Syngo Imaging XS. Each woman was assigned to a single breast density category based on readings from both breasts; as a conservative measure, a less dense code superseded a more dense code. Women were defined as being newly diagnosed with breast cancer when a biopsy report confirmed the presence of the malignant neoplasm suggested by the mammography.	Women were defined as being newly diagnosed with breast cancer when a biopsy report confirmed the presence of the malignant neoplasm suggested by the mammography. Each mammography is accompanied by a medical form including demographics, reproductive variables, self-report symptoms, breast health history, and administrative information such as the year the screening was performed, previous mammography before this screening.



Choose the statistical technique(s) used to analyse the relationship between the SD and breast cancer incidence (Choice = <b>Chi-squared test</b> ) ( <i>bri_sd_stat</i> » <i>bri_sd_stat__2</i> )	Disease data abstraction	Unchecked (0)	Checked (1)
Choose the statistical technique(s) used to analyse the relationship between the SD and breast cancer incidence (Choice = <b>Other</b> ) ( <i>bri_sd_stat</i> » <i>bri_sd_stat__17</i> )	Disease data abstraction	Checked (1)	Unchecked (0)
Other statistical technique(s) used ( <i>bri_otherstats</i> )	Disease data abstraction	proportions, Wald v2 test	Wald Chi Squared, Cochran Armitage rend test
Describe the main result between the social determinant	Disease	Ethnicity: Proportions (#) of incident breast cases are as follows - African ancestry (49), white (3), East Indian (14), mixed (24), Asian and other (1), Missing (40). The OR and CI among incident breast cancer cases is as follows - African ancestry (reference), white (1.22, 0.36-4.06), East Indian (0.99, 0.54-1.82), mixed (0.83, 0.5-1.37), Asian and other (0.71, 0.09-5.35), missing (0.83, 0.54-1.28). None of these results are statistically significant (p value not stated) Marital status: Proportions (#) of incident breast cases are	White women when compared with women of African descent had slightly higher odds of being diagnosed with breast cancer (42%) however this finding was not statistically significant. Wide CI also infers that

and breast cancer incidence <i>(bri_result)</i>	data abstraction	as follows single/separated/widowed/divorced (62), married/common law (66), missing (3). The OR and CI among incident breast cancer cases is as follows - single/separated/widowed/divorced (reference), married/common law (0.82, 0.58-1.17), missing (0.92, 0.28-3.02). None of these results are statistically significant (p value not stated) Multivariate model predicting new diagnoses of breast cancer from screening shows similar, statistically insignificant results (OR and CI)	sample may have been too small to run such an analysis. There was no distinctive difference of breast cancer incidence compared to ethnicity.
Did the researchers control for the potential confounding effect of age on the breast cancer incidence_SD relationship? <i>(bri_ageconf)</i>	Disease data abstraction	Yes (1)	
List all other potential confounders controlled for in the breast cancer incidence_SD relationship. <i>(bri_otherconf)</i>	Disease data abstraction	Via regression: age, race/ethnicity, breast density, menopausal status, parity, family history of breast cancer, presence of symptoms, having had a prior mammography, and having had prior breast surgery, biopsy, aspiration	
Assess the quality of the breast cancer incidence_SD relationship <i>(bri_quality)</i>	Disease data abstraction	Unclear (4)	High risk of bias (3)
Provide a rationale for your assessment of the quality of the breast cancer incidence_SD relationship <i>(bri_rationale)</i>	Disease data abstraction	No indication of response rate; otherwise I would consider it as high risk of bias as it is not population-based.	Sample size was too small (<250)

**Differences were found between the two records named BC 1647--1 and BC 1647--2.**

The table below compares the two records named BC 1647--1 and BC 1647--2. Only the fields that have differing values are listed below. If you need to correct or change the value of one of the records below, simply click on the data displayed in red, and it will take you to that form for that particular record.

**MERGE THEM?**

If you wish to merge selected values from the two records below into a NEW third record, you may [click here to merge them](#).

Label (field name)	Form Name	Record ID	
		BC 1647--1	BC 1647--2
Abstractor ( <i>abstractor</i> )	Basic Data Abstraction	██████	██████
Study name ( <i>study_name</i> )	Basic Data Abstraction		Caribbean Youth Health Survey
Name of third country ( <i>country_3</i> )	Basic Data Abstraction	Barbados	Barabados
Names of all other Caribbean countries ( <i>country_other</i> )	Basic Data Abstraction	British Virgin Islands, Dominica, Grenada, Guyana, Jamaica, St. Lucia	BVI, Dominica, Grenada, Guyana, Jamaica, St. Lucia
Describe measurement tool used to determine the presence of the social determinant1 ( <i>asd1_meas</i> )	Risk factor data abstraction	Maternal and child health representatives from the English-speaking Caribbean developed the questionnaire for the Caribbean Youth Health Survey. Items were derived from the Minnesota Adolescent Health Survey and the Youth Risk Behavior Survey (31-34). After pilot testing among 105 students from three Caribbean countries and revisions, the finalized survey instrument consisted of an 87-item pencil and paper questionnaire with 246 responses. Questions covered a host of demographic, psychosocial and health-related issues.	The self report survey was anonymously conducted with consent protocols conforming to the requirements of the respective participating countries.

Were alcohol levels measured objectively or subjectively? ( <i>alc_obj</i> )	Risk factor data abstraction		Subjective (2)
Describe measurement tool used to determine alcohol levels ( <i>alc_measure</i> )	Risk factor data abstraction		The questionnaire consisted of 87 multiple-choice questions exploring: school performance, school environment, alcohol and other drug use, sexual and reproductive health, physical and sexual abuse, honesty, mental health and suicide, religiosity, family characteristics, relationships with others, violence, general health and nutrition.
Choose the statistical technique(s) used to analyse the		Checked (1)	Unchecked (0)

relationship between the SD and alcohol (Choice = <b>Other</b> ) (alc_sd_stat » alc_sd_stat__17)	Risk factor data abstraction		
Other statistical technique(s) used (alc_otherstats)	Risk factor data abstraction	proportions	frequency table
Describe the main result between the social determinant and alcohol (alc_result)	Risk factor data abstraction	Age: Proportions of alcohol use are as follows (females only) - 10-12 (3.1%) 13-15 (7.3%), 16-18 (11.1%)	Alcohol use increased as age increased among females in this study. 10-12: 3.1% 13-15: 7.3% 16-18: 11.1%
Did the researchers control for the potential confounding effect of age on the alc_SD relationship? (alc_ageconf)	Risk factor data abstraction	Yes (1)	
Did the researchers control for the potential confounding effect of gender on the alc_SD relationship? (alc_gendconf)	Risk factor data abstraction	Yes (1)	
Assess the quality of the alc_SD relationship (alc_quality)	Risk factor data abstraction	High risk of bias (3)	Medium risk of bias (2)
Provide a rationale for your assessment of the quality of the alc_SD relationship (alc_rationale)	Risk factor data abstraction	Not population based	Results stratified by age

**Differences were found between the two records named BC 1670--1 and BC 1670--2.**

The table below compares the two records named BC 1670--1 and BC 1670--2. Only the fields that have differing values are listed below. If you need to correct or change the value of one of the records below, simply click on the data displayed in red, and it will take you to that form for that particular record.

**MERGE THEM?**

If you wish to merge selected values from the two records below into a NEW third record, you may [click here to merge them](#).

Label (field name)	Form Name	Record ID	
		BC 1670--1	BC 1670--2

[http://secure.vhru.org/redcap/redcap\\_v6.0.2/Data/ComparisonTool/index.php?pid=18](http://secure.vhru.org/redcap/redcap_v6.0.2/Data/ComparisonTool/index.php?pid=18)

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Abstractor ( <i>abstractor</i> )	Basic Data Abstraction	██████████	██████████
Article title ( <i>title</i> )	Basic Data Abstraction	Influence of Knowledge and Attitudes on Exclusive Breastfeeding Practice Among Rural Jamaican Mothers	Influence of knowledge and attitudes on exclusive breastfeeding practice among rural Jamaican mothers
Age range ( <i>age_range</i> )	Basic Data Abstraction	14-45	
Response rate ( <i>respo_rate</i> )	Basic Data Abstraction		99.5
State the categories of social determinant1 ( <i>bfsd1_categ</i> )	Risk factor data abstraction	Mother - employed, unemployed, missing; Father - employed, unemployed, not sure	Employed, Unemployed, Missing
Describe measurement tool used to determine the presence of the social determinant1 ( <i>bfsd1_meas</i> )	Risk factor data abstraction	The questionnaire instrument was developed to determine the practices of exclusive breastfeeding and its relationship to knowledge and attitudes in rural Jamaica. It included information on women's sociodemographic characteristics, breastfeeding practices, and preexisting knowledge, attitudes, and beliefs about breastfeeding.	A trained interviewer administered a questionnaire to each woman in private while she waited for clinic appointments. It included information on women's sociodemographic characteristics, breastfeeding practices, and preexisting knowledge, attitudes, and beliefs about breastfeeding.
State the categories of social determinant2 ( <i>bfsd2_categ</i> )	Risk factor data abstraction	(Main source of income) mother, father, other	Mother, Father, Other

Describe measurement tool used to determine the presence of the social determinant2 (bfsd2_meas)	Risk factor data abstraction	The questionnaire instrument was developed to determine the practices of exclusive breastfeeding and its relationship to knowledge and attitudes in rural Jamaica. It included information on women's sociodemographic characteristics, breastfeeding practices, and preexisting knowledge, attitudes, and beliefs about breastfeeding.	A trained interviewer administered a questionnaire to each woman in private while she waited for clinic appointments. It included information on women's sociodemographic characteristics, breastfeeding practices, and preexisting knowledge, attitudes, and beliefs about breastfeeding.
State the categories of social determinant3 (bfsd3_categ)	Risk factor data abstraction	no education, primary education, beyond primary education, missing information	No education, Primary education, Beyond primary education
Describe measurement tool used to determine the presence of the social determinant3 (bfsd3_meas)	Risk factor data abstraction	The questionnaire instrument was developed to determine the practices of exclusive breastfeeding and its relationship to knowledge and attitudes in rural Jamaica. It included information on women's sociodemographic characteristics, breastfeeding practices, and preexisting knowledge, attitudes, and beliefs about breastfeeding.	A trained interviewer administered a questionnaire to each woman in private while she waited for clinic appointments. It included information on women's sociodemographic characteristics, breastfeeding practices, and preexisting knowledge, attitudes, and beliefs about breastfeeding.
State the categories of social	Risk factor data	single, married, common law	Single, Married, Common law

[http://secure.vhru.org/redcap/redcap\\_v6.0.2/DataComparisonTool/index.php?pid=18](http://secure.vhru.org/redcap/redcap_v6.0.2/DataComparisonTool/index.php?pid=18)

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determinant4 (bfsd4_categ)	abstraction		
Describe measurement tool used to determine the presence of the social determinant4 (bfsd4_meas)	Risk factor data abstraction	The questionnaire instrument was developed to determine the practices of exclusive breastfeeding and its relationship to knowledge and attitudes in rural Jamaica. It included information on women's sociodemographic characteristics, breastfeeding practices, and preexisting knowledge, attitudes, and beliefs about breastfeeding.	A trained interviewer administered a questionnaire to each woman in private while she waited for clinic appointments. It included information on women's sociodemographic characteristics, breastfeeding practices, and preexisting knowledge, attitudes, and beliefs about breastfeeding.
State the categories of social determinant5 (bfsd5_categ)	Risk factor data abstraction	< 20, 20-29, >29	<20, 20-29, 30+
Describe measurement tool used to determine the presence of the social determinant5 (bfsd5_meas)	Risk factor data abstraction	The questionnaire instrument was developed to determine the practices of exclusive breastfeeding and its relationship to knowledge and attitudes in rural Jamaica. It included information on women's sociodemographic characteristics, breastfeeding practices, and preexisting knowledge, attitudes, and beliefs about breastfeeding.	A trained interviewer administered a questionnaire to each woman in private while she waited for clinic appointments. It included information on women's sociodemographic characteristics, breastfeeding practices, and preexisting knowledge, attitudes, and beliefs about breastfeeding.

Describe measurement tool used to determine breast feeding levels ( <i>bf_measure</i> )	Risk factor data abstraction	The questionnaire instrument was developed to determine the practices of exclusive breastfeeding and its relationship to knowledge and attitudes in rural Jamaica. It included information on women's sociodemographic characteristics, breastfeeding practices, and preexisting knowledge, attitudes, and beliefs about breastfeeding. The mother was also asked whether at delivery she intended to breastfeed for at least 6 months, information that served as a measure of the mother's confidence for breastfeeding as previously reported by other investigators (8). These questions related to the youngest child or the mother's most recent live delivery. Before administration, the questionnaire was pretested on a sample of 20 randomly selected mothers at one of the study sites. Based on the responses, modifications were made to the instrument as appropriate. Exclusive breastfeeding, which is determined to be optimal for the infant, was defined as nurturing the baby with breastmilk alone for at least 6 months as recommended by the World Health Organization	A trained interviewer administered a questionnaire to each woman in private while she waited for clinic appointments. It included information on women's sociodemographic characteristics, breastfeeding practices, and preexisting knowledge, attitudes, and beliefs about breastfeeding. The mother was also asked whether at delivery she intended to breastfeed for at least 6 months, information that served as a measure of the mother's confidence for breastfeeding as previously reported by other investigators
Choose the statistical technique(s) used to analyse the relationship between the SD and breast feeding (Choice = <b>Multiple logistic regression</b> ) ( <i>bf_sd_stat » bf_sd_stat__6</i> )	Risk factor data abstraction	Unchecked (0)	Checked (1)

Choose the statistical technique(s) used to analyse the relationship between the SD and breast feeding (Choice = <b>Other</b> ) ( <i>bf_sd_stat » bf_sd_stat__17</i> )	Risk factor data abstraction	Checked (1)	Unchecked (0)
Other statistical technique(s) used ( <i>bf_otherstats</i> )	Risk factor data abstraction	proportions	Student sample t test

Describe the main result between the social determinant and breast feeding levels ( <i>bf_result</i> )	Risk factor data abstraction	<p>Occupation: Job status of mother - Proportions are as follows for exclusive breastfeeding and nonexclusive breastfeeding - employed (21.1%, 31.0%), unemployed (79.0%, 68.8%), missing (0%, 0.2%). There is no statistical difference in breastfeeding across maternal job status (p=0.07). Job status of father - Proportions are as follows for exclusive breastfeeding and nonexclusive breastfeeding - employed (88.7%, 92.3%), unemployed (9.8%, 6.4%), not sure (1.5%, 1.3%). There is no statistical difference in breastfeeding across paternal job status (p=0.4). Income: Proportions are as follows for exclusive breastfeeding and nonexclusive breastfeeding - (Main source of income) mother (11.3%, 10.3%), father (53.4%, 36.1%), other (35.3%, 53.6%). There is a significant difference in breast feeding across sources of income (p=0.0005). Education: Proportions are as follows for exclusive breastfeeding and nonexclusive breastfeeding - no education (0.75%, 0.2%), primary education (27.8%, 22.2%), beyond primary education (71.4%, 77.4%), missing information (0%, 0.2%). There is no statistical difference in breastfeeding across education levels (p=0.4). Marital status: Proportions are as follows for exclusive breastfeeding and nonexclusive breastfeeding - single (39.1%, 40.0%), married (21.1%, 16.9%), common law (39.9%, 43.1%). There is no statistical difference in breastfeeding across marital status (p=0.8). Age: Proportions are as follows for exclusive breastfeeding and nonexclusive breastfeeding - &lt;20 (14.3%, 12.5%), 20-29 (52.6%, 55.8%), &gt;29 (33.1%, 31.7%). There is no statistical difference in breastfeeding across ages (p=0.8).</p>	<p>Mostly mothers 20-29 (52.6%) practised or intended to practise exclusive breastfeeding and 55.8% for nonexclusive breastfeeding. Within both groups (exclusive and non exclusive breastfeeding), the group with lowest breastfeeding is the married group. Common law practised exclusive and non exclusive breastfeeding when compared to married and singles. Both exclusive and non exclusive breastfeeding groups had a high percentage of mothers beyond primary education (71.4% and 77.4% respectively). Among patients practising or intending to practice exclusive breastfeeding, the main source of income was the father (53.4%) whereas in the nonexclusive breastfeeding group, the main source of income was "other" (53.6%). This finding was statistically significant (p &lt; 0.0005). Among both groups, job status of mother was mostly unemployed and father was mostly employed</p>
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Did the researchers control for the potential confounding effect of age on the bf_SD relationship? ( <i>bf_ageconf</i> )	Risk factor data abstraction	No (0)	
Did the researchers control for the potential confounding effect of gender	Risk factor data abstraction	Yes (1)	



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on the bf_SD relationship? ( <i>bf_gendconf</i> )			
Assess the quality of the bf_SD relationship ( <i>bf_quality</i> )	Risk factor data abstraction	High risk of bias (3)	Unclear (4)
Provide a rationale for your assessment of the quality of the bf_SD relationship ( <i>bf_rationale</i> )	Risk factor data abstraction	Not population-based; confounders not controlled.	Unclear whether confounders were adjusted for adequately.

## Appendix C – Risk of Bias Assessment Tool

Version 3.1

12-Dec-2015

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This tool is a simplification of the Cochrane ACROBAT-NRSI tool, with adaptations to account for the fact that our systematic reviews do not include non-randomised studies of interventions (NRSI). The types of non-randomised studies that are assessed using this adapted tool are observational studies of any design that report relationships between a social determinant and known risk factors for a specific disease, disease frequency (such as incidence or prevalence), or disease outcomes (such as survival or mortality).

ACROBAT-NRSI is based on the Cochrane Risk of Bias (RoB) tool for randomized trials, which was launched in 2008 and modified in 2011. As in the tool for randomized trials, risk of bias is assessed within specified bias domains, and review authors document the information on which judgements are based.

The focus of this RoB tool is on internal validity. We define bias as a tendency for study results to differ systematically from the results expected from a study of the same design, conducted on the same participant group, and that had no flaws in its conduct. Such bias is distinct from issues of generalizability (applicability) to types of individual who were not included from the study.

The domains of bias used in this adapted RoB tool have the following meaning:

Bias due to confounding	A confounding variable is a prognostic factor that may partly predict whether a participant has a particular value of a social determinant.  <b>Example.</b> For the relationship between level of education (a social determinant) and prostate cancer prevalence (a measure of disease frequency), age and sex would be important confounding factors as both age and sex would also be expected to influence a person's level of education.
Bias in participant selection	Selection bias occurs when some eligible participants are excluded in

	<p>a way that leads to the association between the social determinant and the outcome differing from the association that might have been observed in the absence of these exclusions.</p> <p><b>Example.</b> For the relationship between level of education (a social determinant) and prostate cancer (a measure of disease frequency), participant non-selection may have been related to level of education, with (for example) those with lower levels of education less likely to participate in the study.</p>
<p>Bias due to missing data</p>	<p>Missing data may arise, among other reasons, through attrition (loss to follow up), missed appointments, incomplete data collection and by participants being excluded from analysis by primary investigators. In NRS, data may be missing for social determinants, for disease risk factors, frequency or outcomes, or for other variables involved in the analysis or a combination of these.</p> <p>A general rule for consideration of bias due to missing data is that we should assume that an analysis using the data we intended to collect (were they available) would produce an unbiased effect estimate, so that biases might reasonably be introduced by any missing data.</p>
<p>Bias in measurement of outcomes</p>	<p>Bias may be introduced if social determinants, disease risk factors, disease frequency, or disease outcomes are misclassified or measured with error.</p>
<p>Bias in selection of reported results</p>	<p>Selective reporting is the failure to report, or partial reporting of relationships between social determinants and either risk factors, disease frequency, or disease outcomes that were measured and analysed. Selective reporting might be (a) selective reporting of a particular outcome measurement from multiple measurements; (b) selective reporting of a particular analysis from multiple analyses of a specific outcome measurement; and (c) selective reporting of a subset of the participants.</p>

**DOMAIN 1: Confounding.**

**Table A. Questions for each relationship**  
(one table to be completed for each relationship)

Relationship Description:					
	No	Possibly No	Possibly Yes	Yes	No Info
1.1 Is confounding of the relationship between the social determinant and the disease endpoint unlikely in this study?					
1.2. Did the authors use an appropriate analysis method that adjusted for all the critically important confounding domains?					
1.3. Were confounders that were adjusted for measured validly and reliably by the variables available in this study?					

**Table B. How to Judge and Apply Risk of Bias to each relationship**

Low Risk of Bias	No confounding expected
Moderate Risk of bias	Confounding expected, all known critically important confounding domains appropriately measured and adjusted for; <b>AND</b> Reliability and validity of measurement of critically important domains were sufficient that we do not expect serious residual confounding.
Serious Risk of Bias	At least one known critically important domain not appropriately measured, or not adjusted for; <b>OR</b> Reliability or validity of measurement of a critically important domain was low enough that we expect serious residual confounding.

Unclear Risk of Bias	No information on whether confounding might be present.
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**Table C. Risk of Bias Judgement for each relationship**

**(Add rows for >5 relationships)**

Relationship	Confounding	Comment
R1		
R2		
R3		
R4		
R5		

**DOMAIN 2: Bias in Selection of Participants to Study.**

**Table A1. Cross-sectional & Registry Studies - questions for each relationship**

**(one table to be completed for each relationship)**

Relationship Description:					
	No	Possibly No	Possibly Yes	Yes	No Info
2.1 Representative of target population *					
	<50%	50 to 75%	75% to 90%	>90%	No Info
2.2 Response rate **					

\* Target population need not be general population. Also, registry-based studies will be examined as cross-sectional studies; the quality of the registry will be assessed via Question 2.1 only.

\*\* Not applicable to registry-based studies.

**Table A2. Cohort Studies - questions for each relationship**  
**(one table to be completed for each relationship)**

Relationship Description:					
	No	Possibly No	Possibly Yes	Yes	No Info
2.3 Representative of target population *					
	>50%	25% to 50%	10% to 25%	<10%	No Info
2.4 Attrition rate					

\* Target population need not be general population.

**Table A3. Case-Control Studies - questions for each relationship**  
**(one table to be completed for each relationship)**

Relationship Description:					
	No	Possibly No	Possibly Yes	Yes	No Info
2.5 Cases and Controls taken from same or similar population					

**Table B. How to Judge and Apply Risk of Bias to each relationship**

Low Risk of Bias	<p><b>Cross-sectional:</b> Representative of target population <b>AND</b> response rate &gt;75%</p> <p><b>Cohort:</b> Representative of target population <b>AND</b> Attrition rate &lt;10%</p> <p><b>Case-Control:</b> Cases and controls from same or similar populations</p>
Moderate Risk of	<p><b>Cross-sectional:</b> Representative of target population <b>AND</b> response rate 50%-75%</p>

bias	<p><b>Cohort:</b> Representative of target population <b>AND</b> Attrition rate 25-50%</p> <p><b>Case-Control:</b> Cases and controls possibly from same or similar populations</p>
Serious Risk of Bias	<p><b>Cross-sectional:</b> Not representative of target population <b>OR</b> response rate &lt;50%</p> <p><b>Cohort:</b> Not representative of target population <b>OR</b> Attrition rate &gt;50%</p> <p><b>Case-Control:</b> Cases and controls possibly not or not from same or similar populations</p>
Unclear Risk of Bias	No information on whether confounding might be present.

**Table C. Risk of Bias Judgement for each relationship**  
**(Add rows for >5 relationships)**

Relationship	Selection of Participants	Comment
R1		
R2		
R3		
R4		
R5		

**DOMAIN 3: Bias due to missing data.**

**Table A. Questions for each relationship**  
**(one table to be completed for each relationship)**

Relationship Description:					
	>20%	15% to 20%	10% to 15%	<10%	No Info
3.1 Exclusion of potentially eligible participants because of missing data					
	No	Possibly No	Possibly Yes	Yes	No Info
3.2 Were appropriate statistical methods used to account for missing data					

**Table B. How to Judge and Apply Risk of Bias to each relationship**

Low Risk of Bias	Data were reasonably complete (<10% missing) <b>OR</b> appropriate statistical analyses used to account for missing data
Moderate Risk of bias	Missing data (10-20%) <b>AND</b> missing data not addressed in the analysis
Serious Risk of Bias	Missing data (>20%) regardless if addressed in the analysis.
Unclear Risk of Bias	No information on whether confounding might be present.

**Table C. Risk of Bias Judgement for each relationship**  
**(Add rows for >5 relationships)**



Relationship	Missing Data	Comment
R1		
R2		
R3		
R4		
R5		

**DOMAIN 4: Bias in measurement of outcomes.**

**Table A. Questions for each relationship**  
(one table to be completed for each relationship)

Relationship Description:					
	No	Possibly No	Possibly Yes	Yes	No Info
4.1 Social determinant is appropriately measured? *					
4.2 Risk factor / disease frequency / disease outcome measured objectively **					

\* Social determinants measured via self-report would likely be listed as "Possibly Yes"

\*\* Risk factors which are unlikely to be measured objectively (alcohol, physical activity), and are instead measured via self-report, can be considered as "possibly yes"

**Table B. How to Judge and Apply Risk of Bias to each relationship**

Low Risk of Bias *	Social determinant is appropriately measured (yes or possibly yes) <b>AND</b> risk factor / disease frequency / disease outcome is objectively measured (yes / possibly yes)
Moderate Risk of	Social determinant <b>not</b> appropriately measured (no or possibly no) <b>AND</b> Risk factor

bias	/ disease frequency / disease outcome is objectively measured (yes / possibly yes)
Serious Risk of Bias	Social determinant <b>not</b> appropriately measured (no or possibly no) <b>AND</b> risk factor / disease frequency / disease outcome <b>not</b> objectively measured (no or possibly no)
Unclear Risk of Bias	No information on whether confounding might be present.

\* EXCEPTION: If social determinant and risk factor are measured via self-report out of necessity (eg: alcohol consumption), then risk of bias is considered as moderate, not low.

**Table C. Risk of Bias Judgement for each relationship**

(Add rows for >5 relationships)

Relationship	Measurement of Outcomes	Comment
R1		
R2		
R3		
R4		
R5		

**DOMAIN 5: Bias in selection of the reported results.**

**Table A. Questions for each relationship**

(one table to be completed for each relationship)

Relationship Description:					
	No	Possibly No	Possibly Yes	Yes	No Info
5.1 From the study report, do the results section and figures/tables reflect the data and analyses described in the study methods *					

5.2 Is there evidence of multiple endpoints within the same endpoint domain **					
5.3 Is there evidence of multiple analyses for a single social determinant-endpoint relationship ***					

\*\*\* If paper describes the methods section poorly, this would likely be listed as “No Info”

\*\* An example of this might be BMI and Waist Circumference, both used as measures of adiposity. Also, this does not refer to the abstractors’ own constructs (eg: if article lists maternal age, maternal education as single independent variables, and abstractor categorizes all as proxies of SES)

\*\*\* This question relates directly to 5.2 only, referring to multiple analyses of a single endpoint domain with multiple endpoints examined differently. An example of this might be univariate, then adjusted analyses for the same relationship.

**Table B. How to Judge and Apply Risk of Bias to each relationship**

Low Risk of Bias	There is clear evidence (through examination of a protocol or statistical analysis plan) that all reported results correspond to all intended outcomes and analyses.
Moderate Risk of Bias	Relationship and analyses are not consistent with a stated a priori plan, but there is no absolute evidence of selective endpoint use or of multiple analyses for the same relationship.
Serious Risk of Bias	Relationship and analyses are not consistent with an a priori plan <b>OR</b> there is absolute evidence (“Yes” answers only) of selective endpoint use <b>OR</b> of multiple analyses for the same relationship
Unclear Risk of Bias	No information on whether confounding might be present.

**Table C. Risk of Bias Judgement for each relationship**

**(Add rows for >5 relationships)**

Relationship	Selected Reporting	Comment
R1		
R2		
R3		
R4		
R5		

**ALL DOMAINS: Summary Risk of Bias Table.**

**Risk of Bias Judgement for all domains combined (Add rows for >5 relationships)**

No definitive criteria for determining the Overall RoB as is subjectively based on the qualitative feel of the paper. A general rule of thumb might be that the Overall RoB is most likely to be the same as the worst classification of 5 Domains, but with exceptions.

Relationship	Domain 1: Confounding	Domain 2: Selection of Participants	Domain 3: Missing Data	Domain 4: Measurement of Outcomes	Domain 5: Selected Reporting	OVERALL RoB
R1						
R2						
R3						
R4						
R5						