

# The Holistic Health Status of Chinese Homosexual and Bisexual Adults: A Scoping Review Protocol

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## Protocol

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## Abstract

**Background:** There is a considerable number of homosexual and bisexual people in the Chinese population, while their health conditions have not received sufficient attention compared with general Chinese. Referring to World Health Organization (WHO)'s definition, holistic health is a comprehensive concept incorporating physical, mental, and social well-being. However, existing research seems inadequate and unbalanced on the holistic health of this population, especially many studies only focus on sexually transmitted infections (STI) and relating preventions. Apart from these, the health status of these sexual minorities from a holistic perspective remains unclear. Therefore, this scoping review aims to comprehensively examine all available literature and will be the first to map the existing evidence on the holistic health of homosexual and bisexual Chinese.

**Methods:** This proposed scoping review has been structured according to the Joanna Briggs Institute (JBI) recommended framework, which was proposed by Arksey and O'Malley and further enhanced by Levac, et al. Pilot searches of PubMed in English and SinoMed in Chinese were completed to identify all relevant search terms or keywords, then a comprehensive search strategy has been carried out across all relevant databases centering on health care, psychology, nursing and social science, including both English and traditional as well as simplified Chinese electronic databases. Screening and study selection will be independently conducted by two reviewers, and consulting a third senior reviewer based on consensus needs. Data will be extracted using a structured data form referring to the Cochrane template, and a narrative synthesis of the findings will be used.

**Discussion:** There is no systematically reviewed evidence available or underway review on the holistic health of either homosexual or bisexual Chinese, so this scoping review will serve as a most comprehensive way to map the existing evidence and draw a big picture of their health conditions. Results of this review can be used to inform scholars of existing health issues and other major needs, then to provide scientific references for the development of person-centered culturally sensitive programs with Chinese characteristics.

**Systematic review registration:** This protocol has been registered within Open Science Framework (<https://osf.io/82r7z>) on April 27, 2020.

## Background

Homosexuality have long existed worldwide, and currently there are many western countries having defined legality for same-sex marriage. However, in contemporary China, the government recognizes neither legal same-sex marriage nor civil unions. Compared to western homosexuals who either remain cohabit or enter legal same-sex marriages when available [1], most Chinese gay people can only choose to either stay single or develop hidden relationships in the 'closet', and even fewer bisexual Chinese choose to disclose their sexual orientation [2], thereby leading to inevitable health concerns.

Specifically, homosexual people in the Chinese specific context face many significant difficulties that have yet to be addressed, the most common of which is the long-standing social discrimination or stigma based on sexual orientation and its impacts on their health as well as quality of life [3]. Besides, public attitudes toward homosexuality in China were still not optimistic though homosexual female (lesbian) were more accepted than male (gay) [4, 5]. While both lesbians and gays in China reported they felt stressed and helpless in the face of expectations from society and parents [6, 7], and both Chinese gay and bisexual men reported having suffered internalized homophobia [8, 9], which was found to be positively correlated with loneliness and negatively correlated with lower self-evaluation [8]. All these indicated that many homosexual Chinese were suffering poor mental health, which could lead to self-loathing then probably negatively affects their self-identity [10].

Referring to the literature and studies conducted nationally and globally, there have been some widely used expressions describing these population groups regardless of their sexual or gender identity, such as MSM (Men/Males who have Sex with Men/Males) and WSW (Women who have Sex with Women). It is worth noting that, although MSM/WSW were coined as behavioral categories, this population may not only involve in homosexual behaviors, but bisexual behaviors as well. For instance, 39.5% MSM acknowledged being MSMW (men who have sex with both men and women) according to a national study targeting 2996 MSM participants [11]. Besides, the sexual orientations among MSM population could be various though the majorities were self-identified as homosexual, there were still more than a quarter self-identified as bisexual; and vice versa, MSM who acknowledging bisexual behaviors claimed their sexual orientation as homosexual [12], indicating the necessary to scrupulously categorize study samples.

Correspondingly, researchers not only focus on the health of gays and lesbians from the perspective of sexual orientation, the health of MSM or WSW from the perspective of sexual behavior also deserves attention. Similar to the experience of homosexuals, MSM in China

reported to have a higher level of homophobia compared with those from outside China [13]. Besides, a population-based survey of 47,231 MSM in 61 cities of China [14] reported that, the overall prevalence of HIV (human immunodeficiency virus) was 4.9% and for syphilis was 11.8%. Although there are very few studies on Chinese WSW compared to MSM, existing studies investigating 224 Beijing WSW have shown that they also suffered either STI or reproductive tract infections (RTI), and 15.8% of them were infected with gonorrhea [15]; besides, many of them had ever engaged in different high-risk sexual behaviors, and about half reported bleeding during or after sex [16], all indicating concerning health status among this relatively hidden but considerable large population.

Currently in China, there is no census data on either the homosexual or bisexual population, while with the widely use of the Internet and increasing social tolerance, the sexual minority groups are no longer that hidden as before, and their social and health needs should be perceived then be addressed. To date, there has been a certain amount of research relating homosexual and bisexual Chinese, especially on the MSM population. While the existing studies mainly centered on STI/HIV-related prevalence or prevention attempts [17–26], or rights and legalization of same-sex marriage in the fields of sociology, anthropology, law and psychology [27–29]. Besides, studies targeting on female sexual minorities were much fewer than studies on men [28], which should draw more academia attention.

According to the WHO [30], health is not only the absence of disease, but also complete physical, mental and social well-being. However, in addition to a large number of STI/HIV-centered studies showing sexual unhealthy [31] and mental unhealthy [32] among gay and bisexual Chinese, other aspects of the health and well-being have not been fully studied yet. In sum, the current health-related research targeting Chinese homosexual and bisexual adults seems to be unbalanced and irregular [4], making it difficult to conclude the holistic health of this population, thereby even more difficult to provide people-centered care for their needs.

So far, there is no systematically reviewed evidence available or underway review on the holistic health of homosexual and bisexual people under Chinese context, and current evidence can hardly be summarized due to various types of studies and less precisely defined subjects and research variables, making it difficult to conduct systematic reviews. Nevertheless, scoping review is a type of systematic reviews and has been widely used to map the known information about a topic based on available information, then to identify potential gaps in the literature and to assess the state of knowledge about the specific topic [33–36]. In 2018, the Preferred Reporting Items for Systematic Reviews (PRISMA) Statement was extended to Scoping Reviews (PRISMA-ScR) [37], which was developed from the work of Arksey and O'Malley [33] and enhanced by Levac, et al,[34] then it has been further updated and recommended by the JBI [38]. Therefore, this review will be conducted as a systematic scoping review following the PRISMA-ScR checklist, aiming to comprehensively examine the literature and explore the breadth of the current knowledge relating to the holistic health of homosexual and bisexual Chinese, and identify potential knowledge gaps then inform future in-depth research on improving their health.

## Methods

This scoping review has used PRISMA extension for Scoping Reviews (PRISMA-ScR) Checklist [37] as framework, the updated version recommended by JBI [36]. The current protocol is drafted referring to the Preferred Reporting Items for Systematic Reviews and Meta-analysis Protocols (PRISMA-P) [39,40], and the corresponding PRISMA-P checklist is attached as an additional file (*see Additional file 1*). This protocol has been registered within Open Science Framework (<https://osf.io/82r7z>) on April 27, 2020.

Specifically, the proposed stages for this scoping review are: 1) Identify the research questions; 2) Identify relevant studies; 3) Study selection; 4) Data extraction and charting; 5) Collating, summarizing and reporting the results.

### Stage 1: Identify the review questions

The “PCC” mnemonic, representing Population-Concept-Context, is recommended by JBI [38] as a guide to construct clear research questions for a scoping review. Correspondingly, ‘Population’ in this review refers to all homosexual and bisexual adult in China, including both male/female homosexuality and bisexuality of both genders. Meanwhile, referring to some widely used expressions such as MSM and WSW, as a behavioral category which represented in populations of ‘homosexually active’ men, MSM could incorporate not only gay and bisexual men, but also straight-identified MSM or others [41], which should also be applicable to WSW group.

‘Concept’ in this review refers to the holistic health, a broad conceptualization of health defined by WHO [30], encompassing varied dimensions of health including the complete physical, mental and social well-being, and this review will target all these health-related aspects. After reviewing health relevant definitions [42-46], both mental health and sexual health conditions are multifarious which should include negative and positive aspects. Specifically, mental health conditions will cover all aspects as follows, self-identity, self-esteem, perceived stigma/ prejudice/ discrimination, happiness, loneliness, resilience, mental disorders, distress, anxiety, and depression, etc. Sexual health will involve sexual identity, sexual pleasure/ satisfaction, self-harm behavior and suicidal behavior, risky sexual

behavior (drug/alcohol use), unintended pregnancy, sexual violence, etc. In addition, social well-being will consist of quality of life, social network, relationship and support related variables.

'Context' in this review refers to the locations of study settings or the sources of study participations, corresponding to China Geography or Chinese respectively. To be specific, this review would include studies conducted in all regions of China incorporating North-, Northeast-, East-, Central-, South-, Southwest- and Northwest China [47,48]. Chinese in this review refers to all Chinese from same ethnic while might experience different political system or cultural norms, including people from mainland cities, Hong Kong, Macau and Taiwan.

Thus, following the overarching review question: *'What is the holistic health status of Chinese homosexual and bisexual adults?'*, some detailed review questions will be formulated and further refined as review continues, including:

1. What health-related variables or behaviors have been investigated about homosexual and bisexual Chinese?
2. What types of research have been conducted and which disciplines were most involved in carrying out studies in this population?
3. What are the differences among sample populations with different characteristics?
  - Sexual orientation differences between homosexual and bisexual.
  - Gender differences between male and female minorities.
  - Cultural or social norm differences among mainland China and Hong Kong, Macau as well as Taiwan.
  - Geographical differences among seven major regions in China.

## **Stage 2: Identify relevant studies**

### **Proposed eligibility criteria**

In order to conduct a comprehensive review of the current knowledge on health of homosexual and bisexual Chinese, all scientific literature published in the year 2001 or later will be searched since homosexuality is no longer regarded as a mental illness in China since 2001 [49]. The eligibility criteria for this proposed scoping review using PCC framework is shown in Table 1.

### **Information sources**

The goal of search in this review is to ensure comprehensiveness and accuracy. For a comprehensive literature search, all relevant databases related to health care, psychology, nursing and social science will be searched from 2001 to 2020, including both English and Chinese electronic databases. Specifically, the English databases incorporating published studies and thesis/dissertations to be searched include:

- PubMed
- Web of Science
- CINAHL Plus (via EBSCOhost)
- ScienceDirect
- Social Work Abstracts (via Ovid)
- APA PsycInfo (via ProQuest)
- Sociological Abstracts (via ProQuest)
- Social Services Abstracts (via ProQuest)
- Scopus
- Cochrane library
- Joanna Briggs Institute EBP Database (via Ovid)
- ProQuest Dissertations & Theses A&I

In addition, both simplified and traditional Chinese literature including articles and dissertations will be searched using the following databases:

- CNKI (China National Knowledge Infrastructure; In Simplified Chinese: 中国知网)

- SinoMed (China Biological Medicine Database; In Simplified Chinese: 中国生物医学数据库)
- Wanfang Data (In Simplified Chinese: 万方)
- CQ VIP (In Simplified Chinese: 维普)
- Taiwan citation index-humanities and social sciences (In Traditional Chinese: 人文及社會科學引文索引)
- Index to Taiwan periodical literature system (In Traditional Chinese: 臺灣期刊論文索引)
- Synergy of metadata resources in Taiwan (In Traditional Chinese: 臺灣元數據資源)
- National Digital Library of Theses and Dissertation in Taiwan (In Traditional Chinese: 臺灣博碩士論文電子資料庫)

### Search strategy

The search strategy for this review is drafted with reference to the Peer Review of Electronic Search Strategies (PRESS) Evidence-Based Checklist [50]. Handsearching will also be used as a supplementary by identifying those key authors in this field (via citation report) and scanning their personal files (if applicable) to follow their publications. On this basis, other unpublished documents or grey literature will not be included in this review due to limited resources. Each search via the abovementioned databases would be documented in *Additional file 2* with all electronic search results and terms used to retrieve studies.

A preliminary search was conducted in PubMed (English) and SinoMed (Chinese) in March and April 2020, aiming to verify the feasibility of conducting this review and identify the diversity of evidence available and determine the search strategy as well. In the pilot search trials (*see Additional file 3*), all relevant keywords or subject headings appeared in titles and abstracts were searched and summarized in form of Medical Subject Headings (MeSH terms) and corresponding Chinese translation MeSH terms (CMeSH terms), which would be modified and adapted for further use in all abovementioned databases. Currently, the final search strategy has been confirmed and all MeSH and CMeSH terms or other expressions have been summarized in *Additional file 4*.

### Stage 3: Study selection

The study selection process will be conducted by two reviewers independently (CCW and KWYC). Specifically, the titles and abstracts of all searched studies will be carefully read and evaluated referring to the proposed eligibility criteria, and excluded records will be labeled by the PCC criterion that was not applicable. For studies that are initially considered eligible or potentially eligible by at least one author, the full text of these will be retrieved to further confirm if they could be included in this review. Besides, the reference lists of enrolled review articles would be screened to examine any missing relevant articles and identify more potential studies. Disagreements on study selection will be resolved by discussion and by consulting a third senior researcher if needed.

In accordance with JBI guidelines [37,38], a detailed description of this screening and selection process will be recorded at each stage and shown in an adapted PRISMA flow diagram (*see Additional file 5*), and studies that are excluded on retrieval of the full text will be recorded with specific reasons for exclusion in line with PCC framework.

The final search results will be exported into then be managed by EndNote X9 (good at managing English literature) and NoteExpress (better management of Chinese literature) respectively. Duplicate records will be automatically identified by the two software and the remaining duplicate ones would be hand-removed.

### Stage 4: Data extraction and charting process

A standardized and comprehensive data extraction form will be used to extract data from all included studies, and the extraction template has been developed based on Cochrane Data Extraction Template [51] after confirming all essential variables and key information to extract.

The data to be extracted will include Reference Characteristics, Study Characteristics, PCC-related information, and recommendations as well as summary of key findings from the reviewer's perspective (*see Table 2*).

This template form will be piloted on 3~5 qualitative and quantitative studies eligible for inclusion respectively, then it would be further refined and updated until all important data can be adequately extracted. Afterwards, the data extraction and charting process will be conducted by two reviewers (CCW and EPHC) independently with regular discussion and will be continuously updated in an iterative manner. Any discrepancies in extraction information will be resolved through discussion with the involvement of the third researcher until consensus reached, and any missing data will be sought by contacting study authors.

## **Stage 5: Collating, summarizing and reporting the results.**

The critical appraisal process is not necessary in a scoping review [34,35], while this proposed review will try to conduct a quality assessment of included sources of evidence and report on their basic study characteristics. It could be expected that this review will include a considerable amount of literature and many domestic studies would be published in local journals, which might not be peer reviewed but are still very important parts of the overview. Thus, it is not feasible to evaluate the quality of each reference, then this review will briefly analyze the sources of the included literature journals, such as journal impact factors and/or whether they are included in China core journals, etc.

All retrieved information from the data extraction form will firstly be documented in Microsoft Excel. It is anticipated that evidence identified in this scoping review will be broad and diverse (population characteristics and conceptual variables with outcomes), thus a narrative synthesis of the findings will be used. Specifically, the preliminary findings will be descriptively summarized and presented in a form of table, and characteristics of included literature will cover essential and key items from the data extraction form, including authors and affiliations, year of publication, study design, population and sample size, study settings, health domains and corresponding findings. Then the SPSS 25.0 software will be used to perform some basic calculations about frequencies and percentages of quantitative evidence, and the summary of qualitative evidence regarding author network and descriptions of key health-related variables/ domains would be mapped and presented with the assistant of visualization software which could be available for free download along with technical manuals [52-54].

### **Timeline**

This proposed scoping review is planned to be commenced from March 2020 and is projected to conclude in December 2020, details are as shown in Table 3.

## **Discussion**

In order to map a whole picture that contains all the health-related studies on homosexual and bisexual Chinese, scoping review could serve as a most appropriate way since existing evidence is hardly to be synthesized due to various types of studies and less precisely defined subjects and research variables. Although this review will try to conduct a quality assessment of journals to which the included studies belong, the lack of evaluation of each included reference is still a potential limitation of this study.

Nevertheless, through the results of this scoping review, it is expected to highlight existing health issues among homosexual and bisexual Chinese and identify areas that have not been paid attention to relating to their holistic health; then provide scientific references for health care systems to design person-centered culturally sensitive services with Chinese characteristics, and also draw policy-makers' attention who could provide appropriate welfare to these groups at all ages and highlight areas for subsequent research. Findings from this review will be disseminated at relevant conferences and published in a scientific peer-reviewed journal.

## **Abbreviations**

WHO

World Health Organization; STI:Sexually Transmitted Infections; JBI:Joanna Briggs Institute; MSM:Men/Males who have Sex with Men/Males; WSW:Women who have Sex with Women; MSMW:Men who have Sex with both Men and Women; HIV:Human Immunodeficiency Virus; PRISMA:Preferred Reporting Items for Systematic Reviews; PRISMA-ScR:Preferred Reporting Items for Systematic Review and Meta-Analysis Extension for Scoping Reviews; PRISMA-P:Preferred Reporting Items for Systematic Reviews and Meta-analysis Protocols; PCC:Population Concept Context; MeSH:Medical Subject Headings; CMeSH:Chinese translation of Medical Subject Headings;

## **Declarations**

### **Authors' Contributions**

EPHC and CCW conceptualized this review and designed the research questions. CCW prepared and drafted the manuscript. CCW and KWYC performed the initial screening of the articles and involved in the development of data extraction form; and also piloted the data extraction form. EPHC and PHC are the guarantors and have contributed to the critical revision of the manuscript. All authors have read and approved the final manuscript.

## Ethics approval and consent to participate

Not applicable

## Consent for publication

Not applicable

## Availability of data and materials

Data sharing is not applicable to this article as no datasets were generated during the current protocol stage. While all data generated or analyzed afterwards will be included in the published systematic scoping review article and will also be made available upon request.

## Competing Interests

The authors declare that they have no competing interests.

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Not applicable

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## Tables

Table 1  
Inclusion and exclusion criteria using PCC framework

<b>Inclusion criteria</b>	<b>Exclusion criteria</b>
<b>Population</b> <ul style="list-style-type: none"> <li>• Studies involved homosexual or bisexual adults (18 years old or above), including homosexual lesbian and gay, bisexual male and female, MSM and WSW.</li> </ul>	<ul style="list-style-type: none"> <li>• Studies merely involved male/female commercial sex workers or intersex/ asexual/ transgender people.</li> </ul>
<b>Concept</b> <ul style="list-style-type: none"> <li>• Studies investigated target population's perceptions or any aspect of health (needs) with clear outcome description, including physical (sexual) and mental health and well-being.</li> <li>• Studies investigated health-related risk factors or protective factors.</li> <li>• Studies evaluated health promotion programs among target population.</li> </ul>	<ul style="list-style-type: none"> <li>• Studies did not report any results relating health or well-being.</li> <li>• Non-human studies, such as genetic experiment or other laboratory research only using biological samples of target population.</li> </ul>
<b>Context</b> <ul style="list-style-type: none"> <li>• Studies settings located in or study population came from either mainland China or Hong Kong, Macau, Taiwan.</li> </ul>	<ul style="list-style-type: none"> <li>• Study populations were overseas Chinese.</li> </ul>
<b>Types of studies</b> <ul style="list-style-type: none"> <li>• Original studies used recognized qualitative, quantitative or mixed methods.</li> <li>• Reviews, thesis and dissertations.</li> </ul>	<ul style="list-style-type: none"> <li>• Informal or unscientific references, such as blogs, book chapters, conference abstracts, research letter, editorial note or commentary.</li> <li>• Study protocols.</li> </ul>
<b>Limitations</b> <ul style="list-style-type: none"> <li>• Studies were published between the period of 2001 to 2020.</li> <li>• Publish language was English or Chinese (either simplified or traditional).</li> </ul>	

Table 2  
Data extraction form and charting tool

Main categories	Description
Reference Characteristics	
Title	Full title of the article
Language	English; Simplified Chinese; Traditional Chinese
Year of publication	Published year
Publication type	Research Article; Review Article; Thesis/Dissertation
Journal/University	Also, academic department
Author(s)	Also, the advisor
Institution(s)	Institution of all authors
Funds/Funder details	Sources of funds (if applicable)
Study Characteristics	
Aims/purpose	Research questions
Duration of study	Start and end date, or duration months
Data source	Original collected data; Existing data
Study design	Quantitative (RCT; Non-RCT; Cross-sectional; Cohort; Case-control; Other); Qualitative study; Mixed method study; Review
If intervention study:	Name; Rationale; Duration; Primary outcome; Setting; Others
If reviews:	Review type; Included databases language/sources; inclusion criteria
Sampling method	Convenience; Purposive; Snowball; Respondent Driven Sampling; Venue-based; Internet-based; Random; Multiple methods; Other
Data collection	Modality (Offline/Online/Mixed); Method (Interviews/ Focus group/ Questionnaires/ Laboratory tests)
Population Information	
Target population	Gay; Lesbian; MSM; MSMW; WSW; Bisexual; Other minority
Eligible for inclusion	Description of investigated population
Total sample size	Target sample and also total population
Clinical population	No, or Yes: (HIV-infected) Others
Sexual orientation	Homosexual/Bisexual rate
Mean age (min-max)	If the samples are diverse, then describe separately
Marital status	Sample composition of who are/have ever been married:
Context Information	
Location	Where the study was conducted-Hong Kong, Macau, Taiwan; Mainland
If mainland, then	Sample came from which City/ Province
Multi-centered study	Whether multi-centered study?
Concept Information	
Health domains	Health-related domains investigated: Mental health; Physical health (Sexual health); Social well-being; Additional

Main categories	Description
Variables	List all key variables mentioned/investigated in the study
Measurement/Tools	Self-designed scales; Laboratory test; Scales (Validation or not)
Results of variables	One to one correspondence with the variables
Concise summary	Key findings and/or additional findings relating to the review question
Recommendations	Study limitations and recommendations if available

Table 3  
Stage of review and proposed timeline

Stage of review at time of this submission	Started	Completed
Review protocol development	March 2020	Yes
Preliminary pilot searches of literature	March	Yes
Data extraction tool development (Stage 1)	April	Yes
Register via OSF ( <a href="https://osf.io/82r7z">https://osf.io/82r7z</a> )	April 27	Yes
Formal searching on different databases (Stage 2)	May	Yes
Screening studies by 2 independent reviewers	June - July	Yes
Piloting of the study selection process	July	Yes
Formal study selection and retrieval (Stage 3)	August	Yes
Data extraction and charting (Stage 4)	September	No
Data synthesis and presentation (Stage 5)	No	No

## Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [Additionalfile1.PRISMAP2015checklist.docx](#)
- [Additionalfile1.PRISMAP2015checklist.docx](#)
- [Additionalfile2.Summaryofsearchingresults.docx](#)
- [Additionalfile2.Summaryofsearchingresults.docx](#)
- [Additionalfile3.Pilotsearch.docx](#)
- [Additionalfile3.Pilotsearch.docx](#)
- [Additionalfile4.Searchstrategyandterms.docx](#)
- [Additionalfile4.Searchstrategyandterms.docx](#)
- [Additionalfile5.FlowdiagramreferringtoPRISMA.docx](#)
- [Additionalfile5.FlowdiagramreferringtoPRISMA.docx](#)