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Literature review to inform strategies to address sex and gender bias in the health system

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University

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Abbreviations

ACS: Acute coronary syndrome

ADL: Activities of daily living

AGREE: Appraisal of Guidelines for Research and Evaluation

AMI: Acute myocardial infarction

ANZDATA: Australian and New Zealand Dialysis and Transplantation

ANZOD: Australian and New Zealand Organ Donor

AT: Aerobic training

BDNF: Brain-derived neurotrophic factor

BMIL: Body mass index

BNLA: Building a New Life in Australia

CAD: Coronary artery disease

CALD: Culturally and linguistically diverse

CARI: Caring for Australians and New Zealanders with Kidney Impairment

CCU: Cardiac Care Unit

CHD: Coronary heart disease

CI: Confidence intervals

COPD: Chronic obstructive pulmonary disease

COVID: Coronavirus disease

CVD: Cardiovascular disease

CRT: Cardiac resynchronisation therapy

DoH: Department of Health

ED: Emergency department

ESKD: End stage kidney disease

FAAB: Female assigned at birth

GP: General practitioner

GRADE: Grading of Recommendations Assessment, Development and Evaluation

HF: Heart Failure

HILDA: Household, Income and Labour Dynamics in Australia

HIV: Human immunodeficiency virus

ICD: Implantable cardioverter defibrillators

ICMJE: International Committee of Medical Journal Editors

ICU: Intensive Care Unit

LGBTQI: Lesbian, gay, bisexual, transgender, queer or questioning, intersex

LVEF: Left ventricular ejection fraction

MAAB: Male assigned at birth

NHMRC: National Health and Medical Research Council

OT: Occupational therapy/therapist

Ophelia: Optimising Health Literacy and Access

PAHO: Pan American Health Organization

PCI: Percutaneous coronary intervention

PRISMA: Preferred Reporting Items for Systematic reviews and Meta-Analyses

PT: Physical therapy/therapists, physiotherapists

QoC: Quality of care

RANZCP: Royal Australian and New Zealand College of Psychiatrists

RCT: Randomised Controlled Trial

SAGER: Sex and Gender Equity in Research

SIVCI: Subcortical ischemic vascular cognitive impairment

STEMI: ST-segment elevation myocardial infarction

STIs: Sexually transmissible infections

USAID: United States Agency for International Development

VCI: Vascular cognitive impairment

WHO: World Health Organization

Glossary

Aboriginal and Torres Strait Islander (First Nations) person: A person of Aboriginal or Torres Strait Islander descent who identifies as Aboriginal or a Torres Strait Islander and is accepted as such by the community in which s/he lives (Australian Parliament). There is no single Aboriginal or Torres Strait Islander culture or group, but numerous groupings, languages, kinships, and tribes, as well as ways of living and places of residence.

Acute coronary syndrome: A term that describes a range of conditions related to sudden, reduced blood flow to the heart.

Acute myocardial infarction: Myocardial necrosis or damage resulting from acute obstruction of a coronary artery.

Anxiety disorders: Intense, excessive, and persistent worry and fear about everyday situations. Anxiety disorders can involve repeated episodes of sudden feelings of intense anxiety and fear or terror that reach a peak within minutes (panic attacks). Generalised anxiety is a pervasive feeling of apprehension and uncertainty without a specific focus, but which reduces daily functional efficiency.

Cardiovascular disease: A group of disorders of the heart and blood vessels including coronary heart disease, cerebrovascular disease, and rheumatic heart disease.

Chronic obstructive pulmonary disease: A chronic inflammatory lung disease causing restricted airflow and breathing problems, sometimes called emphysema or chronic bronchitis.

Coronary artery disease: A build-up of plaque in the wall of the coronary arteries that supply oxygen-rich blood to the heart causing narrowing or blockage of the arteries.

Depression: Persistent feelings of sadness, loss of interest in activities once enjoyed, hopelessness, and despair for at least two weeks which can decrease a person's ability to function at work and at home. Depression symptoms vary from mild to severe.

Domestic (family) violence: Violence between intimate partners as well as violence among family members. Domestic violence includes violent or threatening behaviour, or any other form of behaviour that coerces or controls a family member or causes that family member to be fearful.

Door-to-balloon time: The time between the arrival of a patient with ST-segment elevation myocardial infarction (STEMI) in the emergency room and the time that a balloon is inflated in the occluded coronary artery. The current optimal door-to-balloon time is 90 minutes, but in practice often exceeds 120 minutes.

Gender: Defines masculinity and femininity and refers to the socially learnt behaviours, roles, activities, and attributes that a society considers appropriate for women and men. Gender expectations vary between cultures and over time.

Gender bias: Practice or set of beliefs that favours people of one gender over those of other genders.

Gender equity: Fair treatment for women and men according to their needs. Gender inequity is a lack of fairness or justice for women.

Gender equality: As a human rights issue, women, men, boys and girls of all classes and races participate as equals and have equal value. Gender inequality is discrimination on the basis of sex or gender, causing one sex or gender to be routinely privileged or prioritised over another.

Gender norms: Rules of conduct and models of behaviour of women and men expected by a society or social group.

Gender roles: The attitudes, behaviours, responsibilities, functions expected to be fulfilled based on assigned sex in a given society.

Gini index (coefficient): Measures the degree of inequality, such as levels of income, on a scale from 0 to 1, where higher values indicate higher inequality.

International Committee of Medical Journal Editors (ICMJE): A working group of editors of selected medical journals that meets annually. Founded in Vancouver, consisting of 11-member journals and a representative of the US National Library of Medicine. Its purpose to address and provide guidance for the conduct and publishing of biomedical research and the ethical tenets. This advice is detailed in the Committee's Uniform Requirements for Manuscripts Submitted to Biomedical Journals: Writing and Editing for Biomedical Publication (URM).

Implantable cardioverter defibrillator: A small battery-powered device placed in the chest to detect and stop irregular heartbeats (arrhythmias).

Interpersonal violence: intentional use of physical force or power against other persons by an individual or small group of individuals. Interpersonal violence may be physical, sexual, or psychological (also called emotional violence), and it may involve deprivation and neglect.

Intersex: People who are intersex have innate sex characteristics inconsistent with medical and social norms for female or male bodies.

Left ventricular ejection fraction: A measurement of the percentage of blood leaving the heart each time it squeezes. The ejection fraction is usually measured only in the left ventricle, the heart's main pumping chamber.

LGBTQI: Acronym for lesbian, gay, bi, trans, queer/questioning, and intersex. Also LGBTQI+. These terms are used to describe a person's sexual orientation or gender identity, referring to people who are as non-heterosexual, non-heteroromantic, or non-cisgender.

Ophelia: A modern, whole-of-system, approach to developing grounded health literacy interventions, using a new tool called 'The Health Literacy Questionnaire (HLQ)', through a co-creation approach where a wide range of patients, practitioners and policy makers work together to develop health literacy interventions.

Percutaneous coronary intervention: A treatment to open a blocked artery.

Perinatal: The period of time when women become pregnant and up to a year after giving birth. Some broad definitions extend from one year before to 18-24 months after the birth of the child.

Polypharmacy: Using five or more medications simultaneously.

Post-traumatic Stress Disorder (PTSD): A mental health condition that can develop after experiencing or witnessing a horrifying event while being helpless to influence it. Symptoms may include flashbacks, intrusive thoughts and images about the event, anxiety, and avoidance of situations that mimic the event.

Psychosocial: social factors that have the potential to affect emotional well-being.

Randomised controlled trial: A study in which participants are allocated at random to receive or not receive an intervention. One of these interventions is the standard of comparison or control. The control may be a standard practice, a placebo, or no intervention.

Sex: Biological and physical characteristics used to define humans as male or female.

Sexually transmissible infections (STIs): Infections capable of being transmitted through sexual activity, including syphilis, gonorrhoea, chlamydia, trichomoniasis, herpes simplex virus (HSV), and human immunodeficiency virus (HIV).

Socio-ecological model: A multilevel conceptualisation of health that includes intrapersonal, interpersonal, organisational, environmental, and public policy factors.

ST-segment elevation myocardial infarction (STEMI): A type of heart attack with risk of serious complications and death. Its name comes from STEMI's effect on the heart's lower chambers, changing the flow of electrical current.

Stress disorders: Those occur when an event or series of events exceeds a person's coping capacities. The disorders include acute stress response, adjustment disorder, post-traumatic stress disorder (PTSD), and complex trauma disorder.

Systematic literature review: A systematic review of evidence, focused on a research question or questions, that aims to identify, appraise, select, and synthesise all research evidence relevant to the questions.

Transgender: An umbrella term for people whose gender differs from the sex assigned at birth, including binary trans people (trans men and trans women) and non-binary trans people, who may use descriptors such as gender-queer, bi-gender, a-gender, or gender-fluid.

Vascular cognitive impairment: A decline in thinking abilities caused by damage to the brain's blood vessels.

Summary

Background

Women and men have different experiences of health and illness as a result of variations in both sex (biological characteristics) and gender (sociocultural norms). In Australia, women and girls confront specific challenges in their encounters with healthcare systems and practices, resulting in poorer health outcomes including delayed diagnosis and treatment, and underestimation of or disbelief in pain. There is a long history internationally of sex and gender bias in health research. The focus on male bodies (with female bodies as the exception) may be so entrenched that it goes unnoticed by the casual observer. Against this background, this literature review provides evidence upon which robust strategies for reducing sex and gender bias in the Australian health system can be built.

Aims and Research Questions

The literature review aimed to identify and summarise evaluations of strategies to reduce sex and gender bias in health care conducted in Australia and internationally. The key questions to be addressed by the Project were as follows:

1. What are the barriers to gender equity in healthcare and services experienced by women and girls in Australia?
2. Are there clinical guidelines, medical treatments, medical devices and diagnostic tools that do not take into account sex and gender differences?
3. What existing measures/ health promotion tools/ interventions/ programs are there in Australia and overseas that apply a gendered approach?
4. Are there any existing measures/ health promotion tools/ interventions/ programs that could be tailored and piloted nationally to improve health equity and health literacy for women in priority populations?
5. What are the gaps in data collection? e.g. instances where standard reporting does not include disaggregation by sex and/or gender and identify

Method

Five databases (Ovid Medline, Ovid Embase, Ovid PsycInfo, Ovid Emcare, and Cochrane CDSR) were searched using key words and index terms for papers published in English from January 2014 to January 2024. Qualitative and quantitative data were analysed descriptively and organised into themes pertaining to the five research questions. A search for clinical guidelines was conducted separately using the GIN International Guidelines Library, Google search, and organisational websites. The quality of included papers was assessed on their correct usage of the terms “sex” and “gender” and whether sex and gender were reported and discussed appropriately in each section of the paper, using a modified version of the Sex and Gender Equity in Research (SAGER) Guidelines. All guidelines matching the criteria were included without assessing quality.

Results

A total of 6,256 initial records were identified in the five databases and 38 records were found by manual searches. After removing duplicates and screening titles and abstracts for eligibility, 51 papers (reporting 50 studies) were included in the review. There were 21 papers (20 studies) for Question 1 (Barriers in Australia), 1 for Question 2 (Measures and devices), 9 for Question 3 (Interventions), 5 for Question 4 (Health equity and literacy), and 15 for Question 5 (Data gaps). In addition, we identified 80 Australian clinical guidelines relevant to Question 2.

Reporting of Sex and Gender

There were 31 papers (pertinent to questions 1, 2, and 3) that were assessed using the modified SAGER assessment. Only nine papers achieved all eight indicators on the checklist.

Question 1: What are the barriers to gender equity in healthcare and services experienced by women and girls in Australia?

In Australia, a disproportionate number of women experience delayed diagnosis, polypharmacy, and failure to have their symptoms (which might differ from those of men) properly investigated, and women are less likely than men to receive appropriate treatments and health services. Twenty-one papers reported 20 studies conducted in five areas. Ten papers on cardiovascular disease reported that women take longer than men to seek medical treatment, are less likely to be treated with the urgency of 'immediate review' or in the emergency department, less likely to attend cardiac rehabilitation, more likely to be diagnosed with non-ST segment elevation acute coronary syndrome (STEMI), but less likely to receive coronary interventions. Five papers on mental health reported that women were more likely than men to report mental health problems and to experience inequity in psychiatric care utilisation. Women who were migrants reported higher psychological distress than men who were migrants. Two papers on organ transplantation reported that women are less likely to receive kidney transplantation than men, and that male recipients were more likely to receive kidneys from female donors than male donors. One paper reported that women admitted to hospital with stroke were more likely than men to arrive by ambulance but less likely to be managed according to the Ambulance pre-hospital stroke care management. One paper on HIV revealed that men were more likely than women to experience good practice in HIV prevention. It was reported in one paper on gender diversity that the mental health of gender diverse people was directly associated with their experiences of health care. One paper revealed that potentially harmful continuous polypharmacy was more likely in women than men aged over 70 in Australia.

Question 2. Are there clinical guidelines, medical treatments, medical devices and diagnostic tools that do not take into account sex and gender differences?

The 80 Australian clinical guidelines identified in the search were from 51 organisations and designed for 27 areas of practice, from Aboriginal Health to Thoracic Medicine. No sex- or gender-related terms were found in 12 of the guidelines. Most of the remainder used some of these terms only a few times, with 34 guidelines employing "gender" to mean "sex". The terms "sex" and "gender" were defined to some extent in only 4 guidelines. There was no reference to clinical practice concerning sex in 15 of the guidelines, and 46 of them made no mention of clinical practice concerning gender. Only 12 developed gender-relevant practice in any detail. The remaining 22 either implied aspects of gender awareness without stating it, or mentioned "psychosocial" or "cultural" considerations.

Guidelines drew on heterogeneous research, some of which provided no sex-disaggregated data. It is noted that guideline development instruments such as AGREE II and GRADE do not provide instructions for synthesising sex and gender evidence.

The single paper identified in relation to medical devices reported sex differences in the use of implantable cardioverter defibrillators (ICD) in New Zealand, where women were much less likely than men to have the implantation procedure.

Question 3. What existing measures/health promotion tools/interventions/programs are there in Australia and overseas that apply a gendered approach?

Nine papers were identified that reported evaluations of provider or healthcare interventions. They dealt with diabetes and glycaemic control, cardiovascular disease, cognitive health, rehabilitation, smoking cessation, substance abuse, pulmonary disease, and weight management. Although most were found to achieve limited narrowing of the gender gap in care, these studies dealt with different outcomes or variables which made comparison difficult. Interventions through education, training, and counselling were most effective. While six interventions were directed at ameliorating differences arising from the characteristics particular to women and men, two attempted to modify entrenched discrimination in health services and practice and one demonstrated that their standardised tests failed to take account of gendered differences in roles and social circumstances.

Question 4. Are there any existing measures/ health promotion tools/ interventions/ programs that could be tailored and piloted nationally to improve health equity and health literacy for women in priority populations?

There is little evidence to inform us about tailored programs or interventions for women in priority populations, particularly in Australia. Five papers, including a scoping review and a protocol, were identified, reporting on First Nations women, transgender people, regional and remote communities, and refugees and/or asylum seekers. Few showed any strong evidence of the effects of programs or interventions, instead demonstrating the factors or designs that can promote health equity and knowledge.

Question 5. What are the gaps in data collection? e.g. instances where standard reporting does not include disaggregation by sex and/or gender and identify

Fifteen papers were identified that revealed sex and gender gaps in data collection. There was evidence that women have been largely excluded from clinical research, leading to a lack of sex-specific data to inform clinical care. Despite widespread policy requirements (and institutional support) for sex and gender equity in research, sex bias and women's underrepresentation are still evident. The dominant explanation for the failure to remedy the sex and gender data gaps is the historical tendency to consider the (usually Caucasian) male body as the standard and the female body as deviant. Ten leading Australian journals in medical research were found not to incorporate sex and gender adequately in their published papers. An investigation of sex and gender in research in the policies of funding agencies in Australia revealed that eight of the ten had no relevant policy.

Recommendations (Summary)

1. Ensure that the terms and concepts of “sex” and “gender” are defined and used accurately in relation to health care.
2. Introduce and continue culturally sensitive training for healthcare professionals that includes an intersectional and multilingual approach.
3. There should be undergraduate, postgraduate, and continuing professional education that ensures sex and gender awareness in quality of care for all health professions.
4. Ensure that sex and gender discrimination in health care, as well as sex and gender differences in health states and outcomes, are addressed in research, both to enable understanding and to intervene for change.
5. Journal editors and editorial board members (or voluntary editors), need to be supported to ensure that the existing criteria and recommendations for sex and gender aware publication practices are implemented and enforced.
6. Encourage the inclusion of sex and gender awareness in all clinical guidelines, so that existing evidence is assessed for its treatment of sex and gender and to enable strategies to counter inequity and discrimination.
7. Develop a central database of clinical guidelines and require consideration of sex and gender in all NHMRC-endorsed endeavours.
8. There needs to be continuing research on any major differences in the nature, prevalence, and burdens in health problems experienced by women, men, and people of all sexes and genders that influence their needs for health care.
9. Encourage moving beyond simple binaries in sex and gender in medical research and practice.
10. Practise inclusive health care for gender diverse people.
11. For maximum influence, the findings of this report need to be widely distributed.

1. Introduction

1.1. Background

Monash University was commissioned by the Department of Health and Aged Care (the Department) to undertake a literature review to inform strategies to reduce sex and gender bias and disparities in the healthcare system and practice in Australia.

Women and men have different experiences of health and illness as a result of variations in both sex and gender. It is crucial to understand these differences and their ramifications in order to improve health outcomes, quality of life, and well-being for women and men as well as for people who identify as non-binary or transgender.

According to Australia's Gender Health Tracker (Fetherston & Craike, 2020), women are more likely to be at risk of ill health than men at all stages of life. (Although the tracker consistently uses "gender," most of its data apply to sex.) Despite living longer on average than men, women experience higher rates of chronic health conditions and mental health problems than men (Fetherston & Craike, 2020).

Women also have specific needs and concerns associated with sexual and reproductive health that change over their life stages from childhood to old age. First Nations and socio-economically disadvantaged or marginalised groups of women and girls experience worse health outcomes, including higher rates of comorbid conditions and mental health problems, than other groups of women. Men are more likely than women to consume less than recommended quantities of fruits and vegetables, be overweight or obese, and drink alcohol at high risk levels (Fetherston & Craike, 2020). Young men, in particular, often engage in activities that are risky to their health and are more likely to die prematurely from injury rather than live with a non-communicable disease (Fetherston & Craike, 2020).

In Australia, women and girls confront specific challenges in healthcare systems and practice, resulting in poorer health outcomes including delayed diagnosis and treatment, polypharmacy, and dismissal of pain (Wainer et al., 2020). There is a long history internationally of sex and gender bias in health research (Pinn, 2003; Plevkova et al., 2020). Because the male body was accepted as the standard, data were collected only from men and then extrapolated to women, with adverse effects on women's health and well-being (Wainer et al., 2020). The focus on male bodies (with female bodies as the exception) may be so entrenched that it goes unnoticed by the casual observer.

Against this background, and building on the National Strategy to Achieve Gender Equality (Department of the Prime Minister and Cabinet, 2024), this literature review provides evidence upon which robust strategies for reducing sex and gender bias in the Australian health system can be built.

1.2. Definitions of Sex and Gender

The terms "sex" and "gender" are often used interchangeably. People, including researchers, resort to "gender", among other reasons, because "sex" is frequently employed as a shorthand for "sexual activity" in public discourse. However, health research and the policies it informs rely on careful use of language and its connotations. For example, drug therapies can be dependent on accurate attributions of sex—as fundamentally biological—and the associated hormones. Holistic health care needs to respond to gender—a person's psychosocial identity construct—

in order to address the social determinants of health. Gender can influence, for example, risks to health from intimate partner violence and the burden of unpaid work, and how people are able to adhere to health regimens. Careless use of “sex” and “gender” can obscure the components of health care that are most relevant to the matter being investigated. This has been comprehensively summarised by The Sex and Gender Sensitive Research Call to Action Group (Wainer et al., 2020, page 1):

The mechanisms underlying sex and gender differences will include epigenetic, genetic, endocrine, environmental, social, economic and behavioural factors. Hence, ignoring sex and gender differences ... has the potential to compromise the accuracy of science, result in detrimental health outcomes, increase health costs, and have implications beyond health, including social services and aged care.

The practical recommendations made by Clayton and Tannenbaum (2016) are useful both for defining the terms “sex” and “gender” and applying them to research (and, we add, to clinical discourse):

(1) use the terms sex when reporting biological factors and gender when reporting gender identity or psychosocial or cultural factors; (2) disaggregate demographic and all outcome data by sex, gender, or both; (3) report the methods used to obtain information on sex, gender, or both; and (4) note all limitations of these methods.

It is this basic distinction—sex = biology, gender = psychosocial and cultural—that we have applied in assessing the documents contributing to this report.

Nevertheless, this approach is anchored in binaries, which is limited in several ways. One is that a person's sex and gender are interrelated. At the most fundamental—even simplistic—level, gender is constructed around the physical body. This is not justification for treating the words “sex” and “gender” as interchangeable but a reason for attempting to untangle sex and gender and the role they play in health and health care. Further, the binary approach assumes that the world's population consists of women and men who have maintained the sex assigned to them at birth as well as the associated gender.

We acknowledge that research in health and health care frequently accommodates only the binaries of women and men, female and male. This might be because the numbers of people who do not fit these binaries are too small to establish statistical significance in between-group comparisons, or perhaps because researchers are relying on databases built only on binaries. This binary-limited work can make important contributions to our understanding of discrimination against women and girls in health care and the understanding of health more generally.

However, as awareness grows of the needs of people who do not fit these binaries, it is becoming less acceptable to ignore them. Sex and gender discrimination also has adverse effects on people who are intersex and people who are transgender or who identify as nonbinary.

We therefore extend the definitions of sex and gender accordingly, drawing on the work of The Sex and Gender Sensitive Research Call to Action Group (Wainer et al., 2020, page 1):

Sex refers to the biological and physiological characteristics that define humans (and other species) as male, female or intersex, based on chromosomal complement. Gender references roles, behaviour and activities that a given society, at a given time, considers appropriate for men, women and gender diverse persons.

Although the more basic definition may need to be used to assess most published work to date, this more subtle appreciation of sex and gender is understood throughout this report to be the goal to which researchers and healthcare providers aspire.

1.3. Gender Inequality, Disparities, and Bias in Health Care

It is important to distinguish equity and equality. Equity refers to ensuring equal outcomes rather than giving everyone the same services and care no matter their needs or circumstances; the latter would constitute equality (Australian Human Rights Commission)¹. Gender inequity in health refers to the unfair, unnecessary, and preventable provision of inadequate health care that fails to take account of the differences between women and men in their state of health, risks to health, and participation in health work. Gender equity strategies are designed to achieve equality in health outcomes (PAHO)².

Gendered power relations (usually with men having the advantage of power) constitute the root causes of gender inequity and are among the most influential of the social determinants of health (Sen & Ostlin, 2008). This power imbalance contributes to excess female morbidity across the life cycle (United States Agency for International Development)³. Gender inequity and discrimination experienced by women and girls put their health and well-being at risk (World Health Organization)⁴. Women and girls often face greater barriers than men and boys in access to health information and services. These barriers include restrictions on mobility, lack of access to decision-making power, lower literacy rates, discriminatory attitudes of communities and healthcare providers, and healthcare providers' lack of training and awareness of the specific health needs and challenges of women and girls, such as disproportionate experiences of violence (World Health Organization)⁵.

Gender bias refers to any practice or set of beliefs that favours people of one gender over those of other genders. Traditionally, gender bias favours men and boys, putting them in superior positions over women and girls domestically and socially (Meidert et al., 2023). Although explicit biases are easily recognised and challenged, implicit or unconscious bias, based on pervasive stereotypes, can be insidious and difficult to identify, resulting in discrimination that reinforces inequity (FitzGerald & Hurst, 2017).

Gender bias in medicine is defined as clinically unjustified differences in diagnosis and treatment of women and men; there is evidence that women experience greater adverse discrimination (Łyszczarz, 2017). Biases in medicine include differences in the way that women and men perceive and report their illnesses and symptoms, misjudgement of a woman's health risk, misperception of risks and benefits of particular medical procedures, subconscious prejudice and explicit discrimination against women, and cultural biases (Asiskovitch, 2010). Consequently, gender bias in medicine results in inequitable access to and utilisation of health services, leading to probable differences in women's and men's health responsiveness to medical care (Łyszczarz, 2017).

Gender inequity and restrictive gender norms or stereotypes are closely interrelated. Gender norms are collectively held ideas and beliefs about how women and men should be and act (Heise & Manji, 2016), usually based on sex and gender binaries. These norms include unspoken rules that govern the attributes and behaviours that are valued and considered

1 Australian Human Rights; <https://humanrights.gov.au/about>

2 PAHO: <https://www.paho.org/en/topics/gender-equality-health>

3 USAID: <https://www.usaid.gov/global-health/health-systems-innovation/gender-and-health>

4 WHO: https://www.who.int/health-topics/gender#tab=tab_1

5 WHO: https://www.who.int/health-topics/gender#tab=tab_1

acceptable for women and men (Heise et al., 2019). Adverse consequences for health and wellbeing arising from gender inequity are experienced particularly by women and girls, whose health could benefit from the modification of gender norms (Fisher & Makleff, 2022). People with diverse gender identities who, by definition, do not fit the binary gender norms, confront violence, stigma, and discrimination, including in healthcare settings. Consequently, they are at a higher risk of HIV, chronic health conditions, and mental health problems such as suicide. Although the most obvious disadvantages of rigid gender norms are evident in gender minorities and women, such restrictions adversely affect everyone by failing to account for individual differences and preferences.

The long history of entrenched sex and gender norms has inevitably led to bias in the collection of scientific and medical data. According to Lego (2023), the bias is seen in missing or incomplete evidence from clinical trials for diseases that disproportionately affect women, and in the interpretation and application of existing evidence in relation only to men's symptoms. As Nicollette (2000) and others have argued, the sex and gender data gap is a consequence of the historical assumption that the male (usually Caucasian) body is the norm or standard; the female body is the exception or deviant. Female participants have long been underrepresented not only in medical education but also in basic and clinical research (Antequera et al., 2022). One paternalistic explanation for including only men in research is that it safeguards women and children from the risks inherent in research and clinical trials (Heise et al., 2019). However, applying results from men to non-pregnant women and ignoring pregnant women has had adverse effects on the populations researchers claim to protect (Heise et al., 2019).

1.4. Objectives and Research Questions

Objectives: The literature review aimed to identify and summarise evaluations of strategies to reduce sex and gender bias in health care conducted in Australia and internationally.

Research questions:

The key questions addressed by the Project were:

1. What are the barriers to gender equity in healthcare and services experienced by women and girls in Australia?
2. Are there clinical guidelines, medical treatments, medical devices and diagnostic tools that do not take into account sex and gender differences?
3. What existing measures/ health promotion tools/ interventions/ programs are there in Australia and overseas that apply a gendered approach?
4. Are there any existing measures/ health promotion tools/ interventions/ programs that could be tailored and piloted nationally to improve health equity and health literacy for women in priority populations?
5. What are the gaps in data collection? e.g. instances where standard reporting does not include disaggregation by sex and/or gender and identify disparities in health outcomes on the basis of sex.

2. Method

2.1. Search Strategy

Search methods

We engaged two information specialists to advise on our search approach. Standard literature review methods were followed and are reported in accordance with the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) (Page et al., 2021)⁶.

Given the broad scope of the literature review (as represented by the five key research questions) and the inconsistency with which concepts of gender bias and gender inequity are indexed in bibliographic databases, we adopted an iterative approach to the search methods.

Electronic searches

In the first instance, an information specialist (LR) developed separate search strategies for review questions 1 and 3–5 using frameworks (concept grids) that mapped the key concepts of each question to relevant database thesaurus terms and textwords. For review questions 1, 3, and 4 searches were run in MEDLINE, Embase, PsycInfo, and Emcare, all via the Ovid platform. In addition, we searched the Cochrane CENTRAL trials database for questions 3 and 4. For question 5 (gaps in data collection), the search was limited to MEDLINE. (Details for each question are summarised in Table 1.) Searches were initially conducted in September 2023, with the MEDLINE searches all updated on 14 January 2024 (see summary below, Table 1). The concept grids and search strategies for each database are in Appendix A.

A supplementary search of MEDLINE was developed by a second information specialist (SM) to identify systematic reviews and studies evaluating interventions to reduce gender bias, which may not have been captured in the initial searches (see Appendix A. The supplementary search also incorporated the search (translated from PubMed to Ovid MEDLINE) run by Alcalde-Rubio et al. (2020) for their scoping review of interventions to overcome gender bias in clinical practice (Alcalde-Rubio et al., 2020).

Search for guidelines

For review question 2 (clinical guidelines) we searched the GIN International Guidelines Library, limited to Australia as the country of application. We also searched Google using the keywords “clinical guidelines” and “Australia”. We identified organisations (e.g., National Health and Medical Research Council, royal colleges, universities, state and federal governments, associations, societies, foundations, non-government organisations) likely to have relevant guidelines. We searched the supporting information of Shalit et al. (2023), whose authors had had access to the NHMRC guideline database before it was shut down. We decided to include a representative example of guidelines from the Royal Australian and New Zealand College of Obstetrics and Gynaecology (in theory, dealing only with women’s health) and from the Urology Society of Australia and New Zealand (which has dealt predominantly with men’s health) so as not to skew for sex-specific guidelines.

6 <http://www.prisma-statement.org/PRISMAStatement/FlowDiagram>

Summary of Databases by Research Question - Table 1

Question 1: What are the barriers to gender equity in health care and services experienced by women and girls in Australia?

Data source: MEDLINE, Embase, PsycInfo, Emcare

Question 2: Are there clinical guidelines, medical treatments, medical devices and diagnostic tools that do not take into account sex and gender differences?

Data source: GIN International Guidelines Library, Organisation websites Google

Question 3: What existing measures/ health promotion tools/ interventions/ programs are there in Australia and overseas that apply a gendered approach?

Data source: MEDLINE, Embase, PsycInfo, Emcare, Cochrane CENTRAL

Question 4: Are there any existing measures/ health promotion tools/ interventions/ programs that could be tailored and piloted nationally to improve health equity and health literacy for women in priority populations?

Data source: Update search of Alcalde-Rubio 2020

Question 5: What are the gaps in data collection? e.g. instances where standard reporting does not include disaggregation by sex and/or gender and identify disparities in health outcomes on the basis of sex.

Data source: MEDLINE

Selection of articles

Records retrieved from the database searches were imported into EndNote and duplicates manually removed. Screening was piloted on a sample of 400 records independently by two team members (TH, SM) to ensure the selection criteria were being interpreted appropriately. After piloting, one team member (TH) screened the remaining citations, using groups in EndNote to triage records to the appropriate review question(s). Any uncertainties were resolved through discussion with a senior researcher (MK).

2.2. Selection Criteria

The search criteria defined in advance by the Australian Government Department of Health and Aged Care and elaborated by Monash University were as follows:

Inclusion criteria:

- Women and girls of any age group;
- First Nations, LGBTIQ+, CALD, migrant/refugee, disabled, socioeconomically disadvantaged, and regional/remote women and girls;
- Research conducted in Australia and overseas (in economically similar countries);
- Prospective and retrospective studies;
- Any type of evaluation study (using qualitative, quantitative, or mixed methods);
- Programs, interventions, measures, policy reforms, or laws that apply a gendered approach, targeting healthcare users (women or girls) or healthcare providers, applied across different settings (community, health facility, health system);
- Peer-reviewed papers and grey literature published in English from January 2014 to the present.

Exclusion criteria:

- Workplace gender equality, including equity in pay, leadership, participation, recruitment, career progression, and work conditions;
- Gender equality strategies of businesses and employers;
- Gender equity issues covered by the National Strategy to Achieve Gender Equality;
- Female representation or gender balance on boards;
- Gendered occupations and industries;
- Numbers of women vs men taking up medicine or sex disparity in medical specialisation;
- Special institutions or setting such as prisons, the military, and conflict zones including detention centres and refugee camps.

Guidelines

We established eligibility criteria for guidelines:

- Published 2014-April 2024;
- Employed Grading of Recommendations, Assessment, Development, and Evaluations (GRADE) method or similar;
- If no statement of method, EITHER endorsed by the NHMRC or other major national body, OR concerned marginalised groups as listed above.

2.3. Data Extraction, Analysis, and Narrative Synthesis

In order to identify eligible peer-reviewed papers, titles and abstracts were screened in accordance with the inclusion criteria, followed by assessment of the full texts of potentially eligible papers. Data were then extracted from the included papers and tabulated, enabling comparison and, where possible, summaries. We used a standard data extraction form with the categories of study design, objectives, location, sample size, type of intervention (approach, program, or treatment), and outcomes (gender equity, reduction of gender inequities), main findings, conclusions, and limitations. Data extracted from the clinical guidelines were the use and definition of the terms “sex”, “gender”, “female”, “male”, “women”, “men”, “girl”, and “boy”. If none of these terms were identified we also searched for “psychosocial” and “cultural”. We recorded whether guideline developers had used a method such as GRADE, and which organisations had approved or endorsed the guidelines.

Data extraction was cross-checked by two reviewers (TH, MK). Decisions were discussed within the research team until consensus was reached.

To enable a narrative synthesis of the heterogeneous studies included, qualitative and quantitative data were analysed descriptively and organised into themes pertaining to the five research questions.

The papers included were categorised according to the patterns within and across the studies and their relevance to each of the five research questions. Characteristics considered during categorisation included the type of intervention being studied, the setting or context for the intervention, the target group or subgroup, the study design, and the nature of results being reported (different outcome measures or different types of factors that have an impact on interventions).

The text of guidelines surrounding any relevant identified terms was searched for context and meaning.

2.4. Quality Assessment

The quality assessment of included papers was directed at the reporting of sex and gender, using a modified version of the Sex and Gender Equity in Research (SAGER) Guidelines⁷. These guidelines were designed to promote systematic and standardised reporting of sex and gender in research (Heidari et al., 2016), providing a checklist relating to study design, data analysis, results, interpretation, and implication of results for gender equity. The assessment was conducted independently by two reviewers (TH, MK); any disagreements were resolved by discussion.

We refined the SAGER Guidelines by distinguishing sex from gender. Because all studies in this review by definition included matters of relevance to sex or gender equity, questions about whether or not sex or gender were included in the reported research were excluded from our assessment.

Our modified SAGER Guideline checklist includes eight indicators, as follows:

- Authors reported in the introduction whether sex and/or gender differences can be expected.
- Authors ensured adequate representation of women/females and men/males in the methods section (taking into account those cases in which authors were basing their analyses on existing data and could not control representation).
- Methods section included variables/information that enabled a sex-based or gender-based analysis.
- In the methods section, authors reported how sex and/or gender was assigned (e.g., self-report, genetic testing).
- In the results section, data were disaggregated by sex or gender, and sex or gender differences and similarities are described.
- In the discussion, authors discussed sex differences or applied a gender perspective.
- Authors discussed the implications of the results from a sex and/or gender perspective.
- Authors used “sex” and “gender” appropriately.

Papers assessed using these indicators were those pertinent to Question 1, Question 2 (excluding guidelines), and Question 3. Question 4 applied to women only and Question 5 concerned gaps in data collection.

Guideline developers assess the quality of evidence in included papers. We did not conduct further quality assessment of guidelines because we sought only to identify the inclusion of sex and gender in each guideline.

⁷ For details, see at: <https://ease.org.uk/wp-content/uploads/2023/01/EASE-SAGER-Checklist-2022.pdf>

3. Results

3.1. Screening Process and Papers Included

The study selection process is presented in Figure 1. A total of 6,256 records were initially identified in the five databases and a further 38 papers were found by manual searches. After removing 3,640 duplicates, 2,689 records were assessed as potentially eligible based on their titles and abstracts; 2437 were deemed ineligible. Reading the full texts of the remaining 252 papers left 51 papers (representing 50 studies) meeting inclusion criteria for the review. Papers were further categorised by their relevance to the five research questions. There were 21 papers (20 studies) for Question 1 (Barriers in Australia), 1 for Question 2 (Measures and devices), 9 for Question 3 (Interventions), 5 for Question 4 (Health equity and literacy), and 15 for Question 5 (Data gaps) (Appendix B). In addition, we identified 80 Australian clinical guidelines in a separate research strategy relevant to Question 2 (Appendix D).

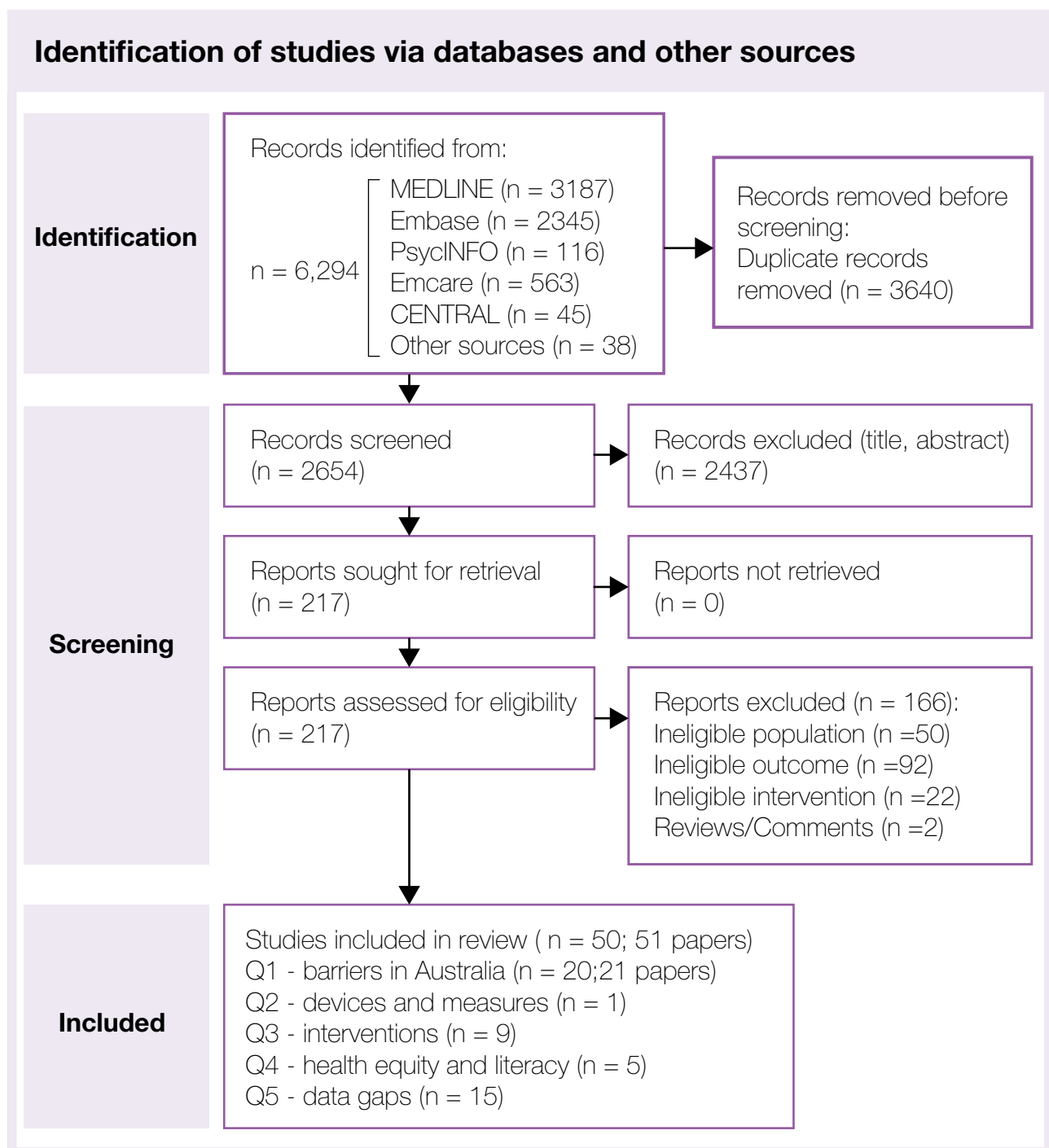


Figure 1. Flow Diagram of Literature Search on Screening for Gender Bias in the Health System

3.2. Reporting of Sex and Gender

As the data extraction table shows (Appendix B), most papers did not define the terms “sex” and “gender” and the terms tended to be used without distinguishing the two. On the whole, research participants were identified by binary categories that applied to biological sex, frequently called gender. (Researchers noted in one paper that their assumption of binary sex was a research limitation: Ireland & Maypilama, 2020.) Four papers did provide definitions of “sex” and “gender” (Gauci et al., 2022; Harreiter & Kautzky-Willer, 2018; Kim et al., 2023; Riggs et al., 2014), although only one paper comprehensively considered sex and gender in its reporting (Riggs et al., 2014). One paper clearly defined self-identified gender (Hostetter et al., 2022).

Nine papers used “sex” correctly in the absence of a definition (Barha et al., 2017; Fogg et al., 2019; Hammarberg et al., 2020; Huded et al., 2018; Lee et al., 2019; Mnatzaganian et al., 2016, 2020; Page et al., 2019; Wang et al., 2022). Similarly, without definition, nine papers included the concept of gender as a social construct, either implicitly or explicitly (Brucki et al., 2023; Cropsey et al., 2014; Guerrero et al., 2014; Hamilton et al., 2022; Hawkins et al., 2021; Jarallah & Baxter, 2019; Johansson et al., 2022; Prioste et al., 2017; Schutt et al., 2015), or linked the significant association of sex with outcome measures to the social context (Hammarberg et al., 2020).

Eight papers used “gender” for sex (Brucki et al., 2023; Cropsey et al., 2014; Guerrero et al., 2014; Hamilton et al., 2022; Hawkins et al., 2021; Looi et al., 2018; McBride et al., 2022; Worrall-Carter et al., 2016), one paper used “sex” and “gender” for sex (Isgro et al., 2020), and two papers used “gender” to mean sex and gender (Jarallah & Baxter, 2019; Schutt et al., 2015).

There were 31 papers (pertinent to questions 1, 2, and 3) subjected to the modified SAGER assessment (Appendix C). Only nine papers were assessed as achieving all eight indicators of the modified SAGER checklist. Eleven papers consistently used “sex” and/or “gender” appropriately. All but two papers reported in their introduction section whether sex and/or gender differences could be expected in the area under investigation. In the methods section, all gave information on the adequacy of representation of participants by sex or gender and presented sufficient information to enable a sex- and/or gender-based analysis. It was difficult to reach a clear assessment of whether there was adequate reporting of the ways in which sex or gender was assigned (such as by self-report or genetic testing) because so many researchers relied on existing data where this information was not provided. All papers presented data disaggregated by sex or gender in the results section and described sex or gender differences and similarities. In the discussion section, 30 papers discussed sex differences or applied a sex and/or gender perspective and all but one discussed the implications of the results from a sex and/or gender perspective.

3.3. Question 1: What are the barriers to gender equity in healthcare and services experienced by women in Australia?

Key Findings:

In Australia, a disproportionate number of women experience delayed diagnosis, polypharmacy, and failure to have their symptoms properly investigated. The symptoms of heart failure, for example, are less likely to be recognised in women than in men. Women are less likely than men to receive appropriate treatments and health services, including organ transplantation when indicated. Barriers to equity are gender-specific, including gender norms, discrimination, and healthcare professionals' bias, as well as more general, such as low health literacy (in health organisations as well as consumers), lack of accessible and culturally appropriate services, geographic location, and place of residence. All can undermine equity in health care and services.

- The 21 Australian papers (on 20 studies) reported on the topics or health conditions of cardiovascular disease (n= 10), mental health (n=5), organ transplantation (n=2), stroke management (n=1), HIV (n=1), gender diversity (n=1), and polypharmacy (n=1).
- **Cardiovascular disease** has disproportionately adverse effects on women. Compared with men, women experience more CVD risks caused by non-biological, environmental, and socioeconomic factors; take longer to seek medical treatment; are less likely to be treated with the urgency of 'immediate review' or in the emergency department; are less likely to attend cardiac rehabilitation; are more likely to be diagnosed with non-ST segment elevation acute coronary syndrome (STEMI), but less likely to receive coronary interventions. One review found no significant sex-based differences in assessment and management of cardiovascular care for Aboriginal and Torres Strait Islander people.
- As a result of gendered demands and barriers to accessing care, women were more likely than men to report **mental health problems** in response to the lockdown policies of early COVID-19 public health measures, and to experience inequity in psychiatric care utilisation. Engagement in and response to risky addictive behaviours were influenced in complex ways by sex and gender. Women who were immigrants reported higher psychological distress than men who were immigrants.
- Women are less likely to receive kidney **transplantation** than men. Male recipients were more likely to receive kidneys from female donors than male donors.
- Women admitted to hospital with stroke were more likely than men to arrive by ambulance but less likely to receive **stroke-specific management**.
- While nearly half of the men with **HIV** history were diagnosed through general sexual health screens, women's HIV was mostly detected through targeted screening; that is, only when HIV was being specifically investigated. This indicates gender disparity in access to sexual health screening and assessment, and low awareness of sexual health risks for women.
- In common with people in general, the mental health of **gender diverse people** was directly associated with their experiences of health care. Respectful treatment from general practitioners promoted good mental health. Discriminatory and disrespectful treatment was associated with poor mental health.
- Rates of continuous **polypharmacy** identified in people in Australia aged 70 were slightly higher in women than men.

Of the 21 papers reporting research in Australia (Appendix B, Table B1), 12 were secondary analyses, three were retrospective cohort studies, three were cross-sectional studies, one was a prospective cohort study, one was a systematic review, and one was a narrative literature review. (The two papers reporting the same study were Mnatzaganian et al., 2016 and 2020.) Of the reported health conditions, 10 were cardiovascular (Fogg et al., 2019; Gauci et al., 2022; Hyun et al., 2017; Lee et al., 2019; McBride et al., 2022; Mnatzaganian et al., 2016, 2020; Murphy et al., 2019; Perera et al., 2021; Worrall-Carter et al., 2016), five were mental health (Brucki et al., 2023; Hailemariam et al., 2021; Hammarberg et al., 2020; Hashmi & Alam, 2023; Jarallah & Baxter, 2019), two were organ transplantation (Kim et al., 2023; Ladhani et al., 2019), one was stroke management (Wang et al., 2022), one was HIV and health care needs (Hamilton et al., 2022), one was gender diversity and healthcare experience (Riggs et al., 2014), and one was polypharmacy (Page et al., 2019).

In the majority category of cardiovascular disease (CVD), three papers focused on gender- and/or sex-specific risk factors. Women experience more CVD risks caused by non-biological and environmental factors, such as socioeconomic status, health inequalities, and interpersonal violence (Gauci et al., 2022). Hyun et al. (2017) reported that women attending primary healthcare services in Australia were less likely than men to have the national guideline-recommended CVD risk factors measured and recorded for the assessment of absolute CVD. For those with or at high risk of CVD, the prescription of appropriate preventive medications was more frequent in older women but less frequent in younger women, compared with their male counterparts; and fewer women were assessed for cardiovascular risk factors (Lee et al., 2019). Five papers about presentation of symptoms and the timing of treatment reported, on the whole, that women sought and received less optimum care than men. For example, women take longer to seek medical treatment for CVD (Gauci et al., 2022) and, when presenting with “atypical” symptoms (that is, of the kind expected in men), women were less likely than men to be treated with the urgency of “immediate review” or “within-10-minutes review” (Mnatzaganian et al., 2016). Women were less likely than men to be examined within the first hour of arrival at the emergency department by an emergency physician (Mnatzaganian et al., 2020) and had longer median symptom-to-balloon times and longer median door-to-balloon times (Murphy et al., 2019). Women tended not to report their CVD risk and symptoms as accurately as men, particularly in the case of myocardial infarction (presumably because historically only men's symptoms have been publicised), resulting in a two-hour delay in seeking treatment (Gauci et al., 2022). Women were less likely than men to receive coronary procedures, particularly revascularisation within one year of hospitalisation for acute myocardial infarction or angina (Fogg et al., 2019). The authors suggest that possible (diverging) explanations for this sex-based discrepancy include that women's needs are not being met and that men are being over-serviced. In contrast, one review of the assessment and management of preventive cardiovascular care in primary health for Aboriginal and Torres Strait Islander people found that women and men alike tended to receive sub-optimal care (McBride et al., 2022).

Two papers reported on drug prescriptions for CVD in Australia primary health care. Hyun et al. (2017) found that women were less likely than men to have risk factors measured and recorded, and therefore less likely to have absolute CVD risk assessed. For patients assessed as having or at high risk of CVD, the prescription of appropriate preventive medications was more frequent for older women, but less frequent for younger women, than for their male counterparts. Similarly, Lee et al. (2019) found continuing gaps in preventive management of CVD, including prescription of indicated medications and risk factor monitoring, and that the gap is larger in women than men. One paper reported on healthy lifestyle adherence by patients who were treated with percutaneous coronary interventions; women were less likely than men to be physically active, attend cardiac rehabilitation, or take statin therapy (Perera et al., 2021). The authors offer a

gendered explanation for the differences, such as women being self-conscious about their appearance, feeling discomfort in groups, and having limited time. Another paper reported on the diagnoses and outcomes of acute coronary syndrome (ACS); women were more likely than men to be diagnosed with non-ST segment elevation ACS, but less likely to receive coronary interventions (angiogram, percutaneous coronary intervention, or coronary artery bypass graft) (Worrall-Carter et al., 2016).

Papers reporting on barriers to equity in mental health encompassed psychological distress, well-being, and general health in the contexts of COVID-19 and of smoking, drinking, and/or gambling; and the psychiatric care of humanitarian migrants. It was found that COVID lockdown policies were associated with increased psychological distress, with women more than men tending to feel restless or fidgety, nervous, and that everything requires effort; women were also more likely to report symptoms of depression and loneliness (Brucki et al., 2023). These higher rates in women, it was concluded, could be attributed to their disproportionate burden of unpaid caregiving (Hammarberg et al., 2020). An econometric investigation of risky addictive behaviours (alcohol, smoking, and gambling) and their effects on general and mental health found that, overall, women in Australia have better general health than men but worse mental health (Hailemariam et al., 2021). Complex interactions were found among risky addictive behaviours, gender, and health. For example, the gender gap in general health is widened by smoking and gambling, whereas alcohol consumption does not contribute to this gap. In contrast, smoking and gambling reduce the gender gap in mental health but alcohol consumption tends to increase the gender gap in mental health. The gaps are influenced by men's greater participation in risky addictive behaviours, although the authors also note that social support, neighbourhood trust, dietary choice, and life satisfaction (which can themselves be gendered) contribute to general and mental health outcomes (Hailemariam et al., 2021). One study reported an examination of inequity in the use of psychiatric services in Australia's mixed public-private healthcare system; researchers found that women's unmet needs are greater than men's, and cite previous research to assert as a reason women's greater need for mental health services (Hashmi & Alam, 2023). An investigation of mental health in humanitarian migrants found that women reported significantly higher psychological distress than men (Jarallah & Baxter, 2019). The authors interpreted their results as arising from different gender roles, norms, and expectations for migrant women and men, with adverse effects on women's mental health. Among the barriers identified are differential access to power and prestige, the greater demands on women in caring for children and extended family ("role overload"), and a limited sense of control over one's life. The relationship between sex and gender on the one hand and psychological distress on the other hand is moderated by the migration pathway; there are significant associations among pre-migration trauma, settlement arrangements (particularly those associated with finance, housing, getting used to life in Australia, and loneliness), and psychological distress.

Two papers reporting on organ transplantation concerned obese patients' access to donated kidneys (Ladhani et al., 2019) and the proportion of female to male donors for living donor kidney transplantation, stratified by recipient sex (which the authors call "gender") (Kim et al., 2023). Overall, obesity reduces the likelihood of being listed to receive a deceased donor kidney, but women who are obese were less likely than men who are obese to be listed when compared with sex-matched people of normal weight. Ladhani et al. (2019) suggest that differences between women and men could arise from systemic barriers of gender and power, including women's status as primary caregivers and their relatively less power in male-dominated medical decision-making. Kim et al. (2023) analysed data from the registries of ANZDATA (Australian and New Zealand Dialysis and Transplantation) and ANZOD (Australian and New Zealand Organ Donor) for the period 2002–2019 and found that there were more male recipients than female

and more female donors than male. This meant that men were more likely to receive kidneys from female donors than male donors (Kim et al., 2023). In contrast, female recipients are more likely to receive a kidney from a female donor if the donor was a sibling, friend, or child. The authors were unable to conclude whether the observed sex disparity was a consequence of selection biases or gendered expectations, but speculated that higher rates of kidney failure in men and donations from their wives, alongside donations to women from female friends and family members, may have contributed to donor-recipient sex disparity (Kim et al., 2023).

One paper reported that women admitted to hospital with stroke were more likely than men to arrive by ambulance but less likely to receive stroke-specific management consistent with the NSW Ambulance pre-hospital stroke care protocol (Wang et al. 2022).

In comparing women and men with human immunodeficiency virus (HIV) who presented to a public HIV clinic, it was found that men were more likely to receive good practice in HIV prevention, early diagnosis, and early initiation of treatment and care (Hamilton et al. 2022). Men tended to be diagnosed through routine sexual health-related screening, whereas, women were more likely to be diagnosed through targeted screening initiated by a health professional.

One paper reporting on the healthcare experiences of gender-diverse Australians was notable for the great care taken by its authors to define sex and gender and to apply the terms consistently (Riggs et al., 2014). The researchers found that gender played a role in the experience of health care, with transgender people assigned male at birth (MAAB) more likely than those assigned female at birth (FAAB) to report positive experiences with psychiatrists and, when they had undergone surgery, with the surgical process. All reported that respectful attitudes from their GPs were associated with good mental health and discriminatory attitudes with poor mental health.

The single paper dealing with polypharmacy (which can have adverse effects) reported that, in people aged 70 years or over, women were more likely than men to have prescriptions for five or even more than ten drugs (Page et al., 2019).

3.4. Question 2: Are there clinical guidelines, medical treatments, devices and diagnostic tools that do not take into account sex and gender differences?

Key Findings:

Guidelines

- The 80 Australian clinical guidelines extracted were designed for 27 areas of practice, such as Aboriginal health, general practice, oncology, and psychiatry.
- “Sex” and/or “gender” were defined in only 4 of the documents.
- 12 of the documents contained none of the terms relating to sex and gender; the terms appeared rarely in most of the remainder.
- The term “gender” was used to mean “sex” in 34 of the documents.
- 15 guidelines included no sex-related data or information; the remainder presented a wide range of information, from a single statement about prevalence to detailed risk factors, prevalence, treatment, and management.
- 46 guidelines included no considerations of gender.
- 12 guidelines included gender-aware text: reference to topics such as gender inequality, transgender, and intersectionality. The remaining 22 mentioned “psychosocial” or “cultural” considerations that could potentially relate to gender.

- Guidelines drew on heterogeneous research, some of which provided no sex-disaggregated data while other research yielded evidence that can inform sex-related clinical practice.
- The unsatisfactory consideration of sex and gender in guidelines can be attributed to the following:
 - Guidelines include only existing work.
 - There is limited research on sex and gender differences in medicine.
 - Few publications present management decisions for patients based on sex or gender.
 - Current guideline development instruments such as AGREE II and GRADE do not provide instructions for synthesising sex and gender evidence.

Medical devices:

- The question of whether there are any medical treatments, medical devices and diagnostic tools that do not take into account sex and gender differences can be answered by indicating the single relevant paper located that did take sex into account. This reported sex differences in the use of implantable cardioverter defibrillators (ICD) in New Zealand, where women were much less likely than men to have the procedure and had higher prevalence of non-ischaemic cardiomyopathy and higher periprocedural complication rates than men.

Clinical Guidelines in Australia

Eighty Australian guidelines were identified that fulfilled the criteria. They covered 27 areas of practice, from Aboriginal health to thoracic medicine, with 21 related to general practice, 9 to oncology, and 7 to cardiology. The guidelines were developed and hosted by 51 organisations: colleges, societies, associations, foundations, non-government organisations, commonwealth and state governments, and expert groups in universities. As planned, we selected one representative guideline from the Royal Australian and New Zealand College of Obstetrics and Gynaecology (RANZCOG), the Endometriosis clinical practice guideline (2021). We were not able to carry out the plan with the Urology Society of Australia and New Zealand (USANZ) because their website (<https://www.usanz.org.au/info-resources/position-statements-guidelines>) directed visitors to the European Association of Urology for their guidelines, which were not within our eligibility criteria. The few Australian guidelines on the site were on topics such as working within COVID lockdown restrictions and performing circumcision on infant males; these were either ineligible (the COVID lockdowns no longer apply) or too specific to male health. Details of all the guidelines are in Appendix D.

Our analysis revealed varied levels of quality in dealing with sex and gender matters in health care, with the mode towards the lower end of the scale. None of the terms “sex”, “gender”, “women”, “men”, “female”, “male”, “girl”, or “boy” were found in 12 of the guidelines, including from the Australasian College of Dermatologists, the Australian and New Zealand College of Anaesthetists, Children’s Health Queensland, and the Royal Australian College of General Practitioners (on e-mental health). The majority of the remainder used some of these terms only a few times, with 34 guidelines employing “gender” to mean “sex”. The terms “sex” and “gender” were defined to some extent in only 4 guidelines: from the Australian Institute of Sport (in their guideline on concussion and brain health), the Australian Professional Association for Trans Health, and GP Supervisor Australia; the Autism Cooperative Research Centre defined gender identity for transgender people (whilst also using “sex” and “gender” interchangeably).

Kidney Health Australia, while not using the terms “sex” or “gender”, referred to care of “women and people with uteruses”, indicating sensitivity to the complexities of sex (and gender). The Australian Institute of Sport noted the lack of evidence on gender; this organisation not only presented definitions of sex and gender but also used the terms consistently.

There was no reference to clinical practice concerning sex in 15 of the guidelines, including from the National Heart Foundation, the Royal Australian College of General Practitioners (on the management of hypoglycaemia), and the Royal Australian and New Zealand College of Radiologists. The 65 guidelines that did incorporate matters relevant to sex presented varied degrees of information, from a single statement about prevalence to detailed risk factors, prevalence, treatment, and management. Guidelines with detailed information about sex-related practice included Ambulance Victoria, the Australian Diabetes Society, the Commonwealth of Australia Department of Health and Aged Care, GP Supervisor Australia, and the Monash University Guideline Development Group.

The majority of guidelines—46 of them—made no mention of clinical practices concerning gender. Only 12 developed ideas of gender in any detail, including discussion of topics such as gender inequality, transgender, and intersectionality. The rest either implied aspects of gender awareness without stating it, or mentioned “psychosocial” or “cultural” considerations that could potentially relate to gender, demonstrating at least awareness of the context within which people live. Examples of organisations with guidelines explicitly incorporating gender awareness are the Australasian Sexual and Reproductive Health Alliance, the Australian Professional Association for Trans Health, the Centre of Perinatal Excellence, GP Supervisor Australia, Living Evidence for Australian Pregnancy and Postnatal Care, and the Royal Australian College of General Practitioners (in relation to preventive care, and in relation to violence and abuse).

Tannenbaum et al. (2017) presented several reasons for the continued paucity of considerations for sex and gender and disaggregated evidence in clinical guidelines. First, there is limited research on sex and gender differences in medicine. Most biomedical experiments have in the past been exclusively conducted on male animals, there is substantial under-representation of women in clinical trials, and many sex and gender differences are yet to be recognised. Second, while there are increasing numbers of medical publications considering women and men separately, less than 25% present differences in management decisions for patients based on sex or gender. Third, the current guideline development instruments do not provide instructions for synthesising sex and gender evidence. According to Tannenbaum et al. (2017), although the Appraisal of Guidelines, Research and Evaluation (AGREE) II⁸ document and the Grading of Recommendations Assessment, Development and Evaluation (GRADE) guidelines⁹ require the specification of populations in systematic reviews, they do not require details of evidence particular to women and men nor any statement about sex or gender differences. The authors argued that, unless clinical practice guideline working groups specifically raise questions about evidence-based sex and gender differences, it is unlikely that the correct search terms will be used to interrogate the literature. We note that women are poorly represented on Australian guideline development panels (Shalit et al., 2023); this could serve as a further contributing explanation.

8 See at: https://www.agreetrust.org/wp-content/uploads/2013/10/AGREE-II-Users-Manual-and-23-item-Instrument_2009_UPDATE_2013.pdf

9 See at: <https://www.bmj.com/content/336/7650/924>; <https://bestpractice.bmj.com/info/us/toolkit/learn-ebm/what-is-grade/>

Medical treatments, devices and diagnostic tools

There were many research papers on medical treatments, devices, and diagnostic tools but most did not meet the inclusion criteria for this review. Only one paper presented gender differences on the use of a device, which was for cardiovascular diseases (Looi et al., 2018). This research investigated sex differences in the application of primary prevention implantable cardioverter defibrillators (ICD) in patients with heart failure in New Zealand. Of the 385 patients receiving implants, only 15.1% were women. It was found that women had a higher prevalence of non-ischaemic cardiomyopathy and overall higher periprocedural complication rates than men (but similar early and late complication rates). No sex differences (named as “gender” differences) were identified in all-cause and heart failure rehospitalisation rates and mortality (Looi et al., 2018).

3.5. Question 3: What existing measures, health promotion tools, interventions, or programs are there in Australia and overseas that apply a gendered approach?

Key findings:

This review identified very few papers reporting evidence from health promotion tools, interventions, or programs in Australia and around the world that applied a gendered approach, and even fewer reporting evaluations of attempts to reduce gender bias and inequity in health care. We identified only nine evaluated provider-based and healthcare-based interventions. Most interventions were found to achieve limited narrowing of the gender gap, although the studies dealt with different outcomes or variables which made comparison difficult (Appendix 2). We concluded that interventions through education, training, and counselling were most effective. These measures were, on the whole, directed at ameliorating differences arising from the characteristics particular to women and men. We found two that attempted to modify entrenched discrimination in health services and practice.

- The nine papers reporting interventions to reduce gender bias and inequities dealt with diabetes and glycaemic control (n=2), cardiovascular disease (n=1), cognitive health (n=1), rehabilitation (n=1), smoking cessation (n=1), substance abuse (n=1), pulmonary diseases (n=1) and weight management (n=1).
- Interventions were conducted in the United States (n=3), Canada (n=1), Italy (n=1), Germany (n=1), Portugal (n=1), Sweden (n=1) and globally (n=1).
- Settings were specialised clinics or primary care (n=5), community or home-based programs (n=2), a residential program (n=1), and one study of a hospital and a clinic (n=1).
- The education, training, and counselling interventions that were effective in narrowing the gender gap included aerobic training for cognitive impairment; a quality of care program for patients with chronic obstructive pulmonary disease; a smoking cessation program delivered through behavioural counselling and pharmacotherapy; substance abuse treatment programs through counselling, group meetings, and medication; and a 12-week weight-management program for adolescents on weight loss and psychosocial well-being.
- Medical treatment interventions included a system-based approach for women in hospital with heart disease, and use of an approach that combined lifestyle and drug therapies.
- One literature review of lifestyle interventions for type 2 diabetes found evidence that women had lower cardiovascular mortality with lifestyle changes than men, and were more successful in reducing and maintaining weight with pharmacological approaches than men.

This review identified nine studies of interventions to reduce gender inequities in Australia and overseas (Appendix B, Table B3). The majority were directed at modifying care according to the sex or gender of the recipients. With three exceptions, no measures or interventions were found that aimed to modify inherent bias or discrimination in the health system, health services, or practice, although the interventions with patients did, by definition, respond to sex or gender inequities. Overall, limited robust evidence was reported. Interventions tended to be short-term, comparing baseline with outcome in a single group.

There were two prospective cohort studies, three cross-sectional studies, two observational studies, one randomised controlled trial (RCT), and one review of international literature. The health conditions that were the subject of the investigations were diabetes and glycaemic control (Harreiter & Kautzky-Willer, 2018; Schutt et al., 2015), cardiovascular disease (Huded et al., 2018), cognitive health (Barha et al., 2017), rehabilitation (Johansson et al., 2022), smoking cessation (Cropsey et al., 2014), substance use (Guerrero et al., 2014), pulmonary disease (Isgro et al., 2020), and weight management (Prioste et al., 2017).

The interventions were conducted in different countries and settings. Apart from the literature review, three were from the United States and one each from Canada, Italy, Germany, Portugal, and Sweden. Five were conducted in specialised clinics or primary care settings (Barha et al., 2017; Huded et al., 2018; Isgro et al., 2020; Prioste et al., 2017; Schutt et al., 2015), three were in community- or home-based programs (Cropsey et al., 2014; Guerrero et al., 2014; Johansson et al., 2022), and one was both hospital and community (Huded et al., 2018). Interventions included education and counselling (Cropsey et al., 2014; Guerrero et al., 2014; Harreiter & Kautzky-Willer, 2018; Isgro et al., 2020; Prioste et al., 2017), exercise and rehabilitation (Barha et al., 2017; Johansson et al., 2022), guideline-directed medical therapy (Huded et al., 2018), and combined pharmacological treatment and lifestyle guidance (Schutt et al., 2015). Most interventions were evaluated without a control group but with pre- and post-comparisons (n=7); only two had a comparison group (Barha et al., 2017; Harreiter & Kautzky-Willer, 2018).

The interventions, the health conditions they addressed, and the methods of evaluation were too heterogeneous to be adequately compared (Appendix B, Table B3). Most were reported to have narrowed the sex or gender gap to some extent, although education, training, and counselling adapted to sex or gender needs appear to have been effective components of patient care.

One of the two education programs for clinicians was directed at identifying sex-biased quality of care in patients with chronic obstructive pulmonary disease (COPD) (Isgro et al., 2020). Using a large database contributed by general practitioners in Sicily, it was found that baseline quality of care was significantly higher for men than for women, but that, after educating doctors about the inherent bias, this discrepancy was no longer significant after two years of care. The goal of this analysis was to contribute to clinician education in overcoming discrimination and bias in quality of care.

An intervention designed to overcome the suboptimal care given to women with ST-segment elevation myocardial infarction (STEMI) investigated sex differences in care before and after the implementation of a STEMI protocol (Huded et al., 2018). It was concluded that the protocol reduced sex disparities in care and outcomes, offering an example of overcoming entrenched and possibly unconscious bias through formal systems.

By comparing standardised tests and self-reported questionnaires, one study demonstrated that the standardised tests failed to take account of gendered differences in roles and social circumstances (Johansson et al., 2022). The authors recommended the development of person-centred, gender-aware instruments to assess home rehabilitation programs.

Education, training, and counselling were delivered as group work with women and men from similar backgrounds, usually combining individual counselling with meetings in clinic or community spaces. A randomised controlled trial of aerobic training in adults aged over 70 years with vascular cognitive impairment found that women significantly improved their Trail Making Test performance (an assessment of cognitive functions, principally attention and working memory), an effect that was retained at follow-up; equivalent improvement was not found in men (Barha et al., 2017). On the other hand, aerobic training led to significant gains in functional fitness capacity in men but not in women (Barha et al., 2017). Such programs and evaluations serve to highlight sex and gender differences that must be considered when providing care.

A United States program of smoking cessation through pharmacotherapy and behavioural interventions, conducted with people under criminal justice supervision living in communities, was directed at identifying differences associated with race and sex (called gender) (Cropsey et al., 2014). It was found that women perceived pharmacotherapy and behavioural interventions as being more effective than men perceived them and that this strengthened their motivation to quit, although the authors point out that women are generally found to have poorer cessation rates than men. Results from this very specific group of people may differ from those in the general population. A similar intervention, directed at substance abuse throughout the United States, employed counselling, meetings, and medication; it resulted in reduced post-treatment substance use, especially in women (Guerrero et al., 2014). Women were found to need and receive more services than men. Effects were modified by race. Equity in service provision could be understood as responding to inequality of circumstances.

An intervention that guided adolescents through a 12-week weight management program assessed the association of weight loss with psychosocial measures (Prioste et al., 2017). It was found that weight loss had a greater effect on the self-esteem of girls than of boys, but that boys reported greater adherence than girls. Sex (called gender) was also found to moderate the effects of drug and counselling on “lifestyle” (diet and exercise) treatments for Type 2 diabetes, with women and men responding slightly differently to pharmacology and counselling (Schutt et al., 2015). Both sets of authors conclude that gender (meaning sex) should be considered when designing programs, one for weight management and the other for treatment for diabetes.

A literature review of sex and gender differences in the prevention of Type 2 diabetes found a variety of differences according to the nature of the condition being addressed (such as polycystic ovarian syndrome, erectile dysfunction), the intervention (such as lifestyle, surgical), and other characteristics of the patient than sex (such as age, ethnicity) (Harreiter & Kautzky-Willer, 2018). Nevertheless, it was clear that both sex and gender played important roles in outcomes and that each needed to be considered when planning programs for prevention and care of diabetes.

3.6. Question 4: Are there any existing measures, health promotion tools, interventions, or programs that could be tailored and piloted nationally to improve health equity and health literacy for women in priority populations?

Key Findings:

There is little evidence to inform us about tailored programs or interventions for women in priority populations, particularly in Australia. Five papers, including a scoping review and a protocol, were identified, reporting on First Nations women, transgender people, regional and remote communities, and refugees and/or asylum seekers. Few showed any strong evidence of the effects of programs or interventions, instead demonstrating the factors or designs that can promote health equity and knowledge.

- Countries represented in the five studies were Australia (n=4) and the United States (n=1).
- Three of the five studies used qualitative methods.
- The health knowledge or literacy demonstrated by transgender and non-binary people was adversely affected by healthcare providers' inadequate knowledge of the ways in which gender-affirming treatments and medications interact with other medical interventions.
- A reproductive health literacy framework for First Nations women that is culturally responsive to their complex and multilingual circumstances was found to improve women's health knowledge and their reproductive health.
- Women in Australian rural and remote communities need a women's health service that is responsive to the needs of women individually as well as collectively. Women confront barriers to access and high costs occasioned by isolation and distance.
- The socio-economic model of health (at the levels of the individual, organisation, and community) has been found to be a useful tool to understand how to prevent adverse health outcomes and intervene at several levels to improve the health of refugee and asylum seeker women. Another framework, Ophelia (Optimizing Health Literacy and Access), when modified for refugee and asylum seeker women, appears to be a promising tool for promoting culturally sensitive practices that could have implications for women.

There is little evidence about interventions or tailored programs that could contribute to achieving equity for women in priority populations, although there are examples of research focusing on situation analyses, existing gaps, risk factors, and the development of support frameworks or strategic planning (Appendix B, Table B4).

Four papers reported on priority populations: First Nations women in Australia, transgender people in the United States, regional and remote communities in Australia, and refugees and asylum seekers in Australia and elsewhere. Three research projects used qualitative methods (Hostetter et al., 2022; Ireland & Maypilama, 2021; Sivertsen et al., 2022), one was a literature review (Hawkins et al., 2021), and one was a research protocol (Jawahar et al., 2023). These papers demonstrated the factors or designs that can promote health equity and literacy rather than providing strong evidence of the effectiveness of programs or interventions.

An investigation of access to health care by transgender and non-binary people in the United States found that poor provider literacy, provider incompetence, and discriminatory attitudes

limited the capacity of transgender and non-binary people to understand and use healthcare information as well as their access to appropriate care (Hostetter et al., 2022). Problems with achieving insurance coverage and the difficulties of finding health care were exacerbated by poor provider knowledge. For example, many providers appeared to be ignorant of potential interactions of gender-affirming treatments and medications with other medical needs, such as diabetes care or contraception. The need to educate healthcare providers was an added burden on patients. In contrast, respectful and knowledgeable providers contributed not only to good care and trust but also to transgender people's own knowledge and confidence.

First Nations women of the Yolŋu people in remote Northern Australia were central to participatory action research as a means of developing a framework, in their own language, for reproductive health literacy (Ireland & Maypilama, 2021). The co-designed framework was offered as an example of culturally sensitive health care designed to challenge inequities experienced by Indigenous women. Its success was attributed to respectful "Two Way" learning that incorporated both Yolŋu and Western medical knowledge. The process and the resulting framework were said to contribute to enhancing women's reproductive health literacy and improving their reproductive health outcomes.

A research project in rural and regional New South Wales had wide-ranging aims that included identifying gaps in community women's health programs and contributing to service provision and strategic planning (Sivertsen et al., 2022). It was found that women experienced deficits in and poor access to services as well as lengthy wait times. There appeared to be an inadequate understanding by providers of the differences between common health problems and personalised, women-centred care. The researchers concluded that additional funding for community women's health services for mental health, drug and alcohol treatment, domestic violence, housing/shelter, Aboriginal clinics, additional nurses in rural health, and subsidies for transportation is essential if outcomes for women are to be improved in these rural and remote locations.

Hawkins et al. (2021) conducted a literature review to assess the ways in which individual, interpersonal, community, and organisational factors interact to influence the health of refugee women after resettlement. Applying a social-ecological model, the researchers identified various levels at which interventions could not only prevent secondary victimisation but contribute constructively to improved health. They concluded that, at the individual and interpersonal levels, addressing language barriers, improving provider-patient communication, and providing appropriate medical and mental health screenings would be of benefit to the women. At the organisational level, it is essential to have good inter-organisational communication and awareness so that gains can be optimised rather than forcing women to begin at the beginning again with every organisation. This multi-level approach needs to take place with the strong support of the communities within which women are settled (Hawkins et al., 2021).

A research protocol for a project to be based in Melbourne was designed to challenge the recognised difficulties and barriers experienced by refugees and devise the means to overcome them (Jawahar et al., 2023). Working on co-design with Karen people, former refugees from Myanmar, the researchers plan to employ the Ophelia (Optimizing Health Literacy and Access) process¹⁰ to assess the community's needs, with an emphasis on cultural sensitivity. Although the concept is not developed in the protocol, gender (possibly meaning sex and gender) is stated as one of the demographic differences to be considered in the research. This project might provide useful information by its completion.

10 The original Ophelia manual is at <https://healthliteracydevelopment.com/>

3.7. Question 5: What are the gaps in data collection? (E.g., instances where standard reporting does not include disaggregation by sex and/or gender and identify disparities in health outcomes on the basis of sex.)

Key findings:

Fifteen papers were identified that revealed sex and gender gaps in data collection. Despite widespread policy requirements (and institutional support) for sex and gender equity in research, sex bias and women's underrepresentation are still evident. The dominant explanation for the failure to remedy the sex and gender data gaps is the historical tendency to consider the (usually Caucasian) male body as the standard and the female body as deviant.

Most of the papers included in this review addressed the ways in which sex- and/or gender-sensitive and sex-disaggregated reporting was (or was not) presented in peer-reviewed publications, without specifying the health conditions.

- Of the 15 papers, seven reported literature reviews, four reported systematic reviews, and one was a scoping review. The remaining three papers reported an observational study, a cross-sectional study, and a bibliometric study. Eleven papers had a global focus. There was one each reporting research from Australia, Canada, North America, and Europe.
- 10 leading Australian journals in medical research were found not to incorporate sex and gender adequately in their published papers.
- An investigation of funding agencies' policies about sex and gender in research revealed that eight of the ten funding agencies had no such policy.
- In three United States high-impact biomedical journals, significantly more men than women were enrolled in clinical research.
- An investigation of Cochrane systematic reviews of interventions revealed that, while more than 70% of reviews provided sex-disaggregated descriptive data, only 27.5% reported main outcomes by sex, and less than 20% included sex-related reporting in the abstract, design and discussion.
- Sex bias is present in the enrolment of interventional clinical trials listed in the UK registry; while almost all studies described the demographic data of participants by sex in Canadian RCTs, no article defined sex and/or gender;
- The sex bias and underrepresentation of women in clinical trials for specific health conditions and treatments (sepsis, diabetes, COVID-19 vaccine, surgery, tendinopathy, and atrial fibrillation) resulted in significant gaps in sex and gender data with potential resultant harm to women.

Fifteen papers were identified that reviewed sex and/or gender disparities and underrepresentation of women in clinical research and reporting (Appendix B, Table B5). Most of the studies addressed how gender-sensitive and gender-disaggregated reporting was presented in journals without specifying the health conditions. Some of the studies did analyse sex and/or gender reporting by focusing on particular health conditions, preventions, or treatments such as sepsis, diabetes, COVID-19 vaccination, surgery, smoking, patellar tendinopathy, atrial fibrillation, and physical activity. Four studies were reported from Australia, Canada, and North America and Europe, and the others were global. Four papers reported systematic reviews, one was a scoping review, seven were literature reviews, and the rest reported an observational study, a cross-sectional study, and a bibliometric study.

An analysis of all papers (n = 1136) published in 2020 in the 10 leading Australian medical research journals¹¹ led the authors to conclude that sex and gender are poorly incorporated (Hallam et al., 2023). Just over 88% (n=873) reported sex and/or gender, but 480 of them used conflicting terminology. Only 14 (1.6%) described how sex and gender were determined. The primary outcome or key aim was stratified by sex and/or gender for 249 (29.2%) participant groups and the influence of sex and/or gender on the results was discussed in only 171 (17.3%) of the papers. There was no difference between journals that did and those that did not endorse the International Committee of Medical Journal Editors (ICMJE) guidelines, which contain criteria for sex and gender reporting. A similar analysis of 1442 manuscripts, from three American high-impact biomedical journals, reporting registered clinical trials (with more than four million participants) conducted in North America and Europe, revealed that significantly more men than women were enrolled in clinical research (Barlek et al., 2022).

An investigation of sex and gender in research in the policies of funding agencies in Australia revealed that eight of the ten had no relevant policy. The National Health and Medical Research Council (NHMRC) and Diabetes Australia did have policies on the collection, analysis, or reporting of sex- and gender-specific health data. However, only the NHMRC explicitly recommended the analysis and reporting of sex- and gender-specific data (Wainer et al., 2020).

At the global level, Antequera et al. (2022) investigated the extent to which sex is analysed and reported in Cochrane systematic reviews of interventions, and also how that was associated with the sex (which they called gender) of the first and last authors. They found that, of 516 eligible reviews published in 2018, 56 (10.8%) included sex-related reporting in the abstract, 90 (17.4%) considered sex in their design, 380 (73.6%) provided sex-disaggregated descriptive data, 142 (27.5%) reported main outcomes or performed subgroup analyses by sex, and 76 (14.7%) discussed the potential impact of sex or the lack of such an impact on the interpretations of results. Sex was more likely to be reported when there were senior women authors (Antequera et al., 2022).

An analysis of medical research literature published in the 10 years to 2019 found both a gender gap and misogyny (Merone et al., 2022). Misogyny, identified in 5 of 17 included papers, was exemplified by the assessment of female attractiveness for alleged medical reasons, such as claiming that attractiveness is a marker of health, or that severe endometriosis tends to occur in women rated as attractive by men. Women could be evaluated for general attractiveness or for the eye-catching quality of their breasts. No papers were reported by Merone et al. (2022) that assessed male attractiveness in relation to health.

As part of an exercise in developing the SAGER guidelines in 2016, it was found that only 7% of 716 journals had a policy for reporting sex and/or gender and that, of 100 journals, 75% of editors were unsure or unwilling to introduce sex and gender considerations as a requirement in the instructions for authors (Heidari et al., 2016). Countries in which women and men are more equal were more likely to have sex and gender policies than countries where the sexes were less equal, and female survey respondents were more likely to support sex and gender policies than male respondents.

In the field of clinical trials, Prakash et al. (2018) found that sex bias was still evident in participant selection despite US legislation requiring the inclusion of women. The database ClinicalTrials.gov revealed that, in Phase I trials (64.1% male/35.9% female), Phase II trials (48.4% male/51.6% female), and Phase III trials (51.0% male/49.1% female) women were significantly under-

11 ANZ Journal of Surgery, Medical Journal of Australia, ANZ Journal of Psychiatry, ANZ Journal of Public Health, Respiriology, Clinical & Experimental Ophthalmology, Clinical & Experimental Pharmacology & Physiology, Immunology & Cell Biology, Journal of Gastroenterology & Hepatology, Journal of Paediatrics & Child Health

represented ($p < 0.05$) (Prakash et al., 2018). Similarly, in Canadian randomised controlled trials (RCTs), although 98% of papers described the demographic composition of study participants by sex, in only 6% of studies was a subgroup analysis by sex conducted and only 4% reported sex-disaggregated data (Welch et al., 2017). No article defined sex and/or gender, and no publication reported a comprehensive sex and gender analysis.

Analyses of health condition-specific and treatment-specific studies found that the sex bias and underrepresentation of women in clinical trials resulted in significant sex and gender data gaps. From the clinical guidelines and systematic reviews for sepsis treatment, Antequera et al. (2020) found that female participation was 40% in 246 studies, and that women were underrepresented in proportion to their share of the sepsis population (participation-to-prevalence ratio: PPR 0.78). Papers reporting non-RCT research published since 1995 were likely to state the sex of subjects, although those reporting RCTs were unlikely to do. Day et al. (2019) found inadequate accounting of sex and gender in papers reporting research on diabetes. Although almost all of 151 papers gave the sex of research participants, only 10 (6.5%) reported all study outcomes separately by sex and/or gender, sex-related matters were discussed in only 21 (13.5%) papers, and the role of gender was discussed in only one paper. A scoping review of sex and gender sensitivity in intersectionality-based epidemiological analyses (broadly considering the intersection of sex/gender and race/ethnicity) in three health-related fields (diabetes, smoking, and physical activity) found that, although sex or gender was considered in every paper, the categories were treated as exclusively binary and rarely considered as contributing to health-related solutions (Mena & Bolte, 2019).

In other examples, of 75 clinical trials testing COVID-19 vaccines, only 24% presented their main outcome data disaggregated by sex and only 13% included any discussion of the implication of their study for women and men (Heidari et al., 2021). A review of sex bias in human surgical clinical research reported in five surgery journals found wide variation in sex-based inclusion, matching, and data reporting in various surgical specialties (Mansukhani et al., 2016). Colorectal surgery had the best matching of male and female participants and cardiac surgery had the worst. Few studies included equal numbers of women and men, and less than one-third performed data analysis by sex. A systematic review of papers reporting research on patellar tendinopathy revealed that, of 3894 patients whose sex was specified, there were far more men (3022; 78%) than women (250; 25%) (Mondini Trissino da Lodi et al., 2022). This percentage did not change when the evaluation was limited to high level studies; 41 RCTs enrolled a total of 310 women (22%) and 1121 men (78%). A review of research on atrial fibrillation found that women remain substantially less represented in RCTs than men, and that sex-stratified reporting of primary outcomes is infrequent in 12 top-tier journals (Noubiap et al., 2022). Women were under-enrolled by 12.5%, although female enrolment was higher in trials with larger sample sizes.

Conclusion

The questions asked and answered in this literature review covered diverse aspects of health. Despite this heterogeneity, the general and unavoidable conclusion is that there are unjust, unnecessary, and preventable inequities between women and men in their health, experience of healthcare practice, research, and health systems in Australia and globally. Most papers reviewed did not define the terms “sex” and “gender”, and tended to categorise research participants by binary biological sex, often called gender.

We found sex and gender differences in the risk, presentation, treatment, and research of various health conditions in Australia, including cardiovascular disease, mental health, organ transplantation, transgender health, and polypharmacy. Women and girls in Australia experience unique challenges in healthcare systems and practice, resulting in problems such as delayed diagnosis and treatment, polypharmacy, and failure to have their symptoms properly investigated.

While some differences can be attributed to biological differences between women and men, many arise from the explicit and implicit biases of healthcare professionals, who inevitably reflect the rigid sex and gender norms of the general population of which they are a part. Our findings highlight the need for the healthcare professions to recognise and address the adverse effects of implicit biases and disparities in health care.

We found variations in the extent to which evidence on sex and gender is incorporated in Australian clinical practice guidelines. The terms “sex” and “gender” tended to be used interchangeably or conflated, and were rarely defined. Of 80 guidelines, 20 used none of these terms and only 12 referred substantively to gender disparities and considerations. Only one guideline noted a lack of gender-based evidence. Of course, guidelines are based on existing work, but we are confident that guidelines now being prepared can be gateways to greater awareness of sex and gender. Although it is apparent that local interventions are likely to have only local effects, guidelines can have more diffuse influence in an area of practice.

There was limited evidence of interventions to reduce gender bias and inequity in health care globally. The majority of interventions achieved some narrowing of the sex or gender gap, although the very heterogeneous interventions, research, and evaluation made comparison difficult. Nevertheless, it appeared that education, training, and counselling tended to be effective, particularly in alcohol and substance use, cardiac rehabilitation, and weight management. We found only two interventions directly addressing bias in practitioners; both were assessed as successful. One intervention addressed gendered bias in instruments used for assessment.

Women who are Indigenous, immigrants, or refugees and those from low-income, rural and remote, or marginal backgrounds are more likely to face additional health inequities because of the lack of accessible and culturally safe healthcare services, entrenched institutional discrimination, and language barriers. These obstacles result in a higher prevalence of diagnosed chronic diseases and poor mental health. This review has led us to conclude that it is of vital importance to introduce and continue culturally-sensitive training for healthcare professionals and to adopt a multilingual approach. These are steps towards ensuring health equity and to the promotion and enhancement of health knowledge and literacy for women who are culturally and linguistically diverse and socioeconomically disadvantaged.

Despite recognition of the importance of sex inclusiveness in clinical research or randomised controlled trials, sex bias is prevalent and sex and gender data are poorly reported in many

leading medical journals. Even Australia's top medical journals do not always adhere to the sex and gender criteria and recommendations of the International Committee of Medical Journal Editors guidelines. These findings cast doubt on the generalisability of research results and the validity of applying these results to the treatment of women and sex- and gender-diverse people. Further efforts are needed to improve measures and policies, train and educate researchers, and support changes in research practices across the health and medical research sector.

The limitations of this review are, first, that only papers published in the English language have been included. The second limitation arises from the fact that it was necessary to develop search terms for concepts that are not well defined in the databases. Therefore, despite our attempts to be comprehensive (as Appendix A demonstrates), it is possible that we have missed relevant papers not accommodated within the search strategy. The review was not designed to identify sex and gender differences in the prevalence, nature, and determinants of health conditions; there is an extensive literature on these topics. With exceptions depending on the question being answered, papers were included only if they compared women and men; papers reporting research on women, without comparisons, are not in general represented here because they could not contribute to the understanding of sex and gender inequity. Finally, although we made extensive, repeated searches for clinical guidelines, we cannot be sure that we found them all. The NHMRC guidelines database is no longer available and there is no other central database in which guidelines are recorded.

One further conclusion to be drawn from this literature is that women's health and women's bodies are over-medicalised. Sociocultural influences on women's health and their experiences of care are too often missing from research and practice. Even when "gender" is the term applied, the reference tends to be "sex". A fully sex- and gender-aware health system is essential if we are to bring about equity in health care.

Recommendations

Recommendations (Summary)

1. Ensure that the terms and concepts of “sex” and “gender” are defined and used accurately in relation to health care.
2. Introduce and continue culturally sensitive training for healthcare professionals that includes an intersectional and multilingual approach.
3. There should be undergraduate, postgraduate, and continuing professional education that ensures sex and gender awareness in quality of care for all health professions.
4. Ensure that sex and gender discrimination in health care, as well as sex and gender differences in health states and outcomes, are addressed in research, both to enable understanding and to intervene for change.
5. Journal editors and editorial board members (or voluntary editors), need to be supported to ensure that the existing criteria and recommendations for sex- and gender-aware publication practices are implemented and enforced.
6. Encourage the inclusion of sex and gender awareness in all clinical guidelines, so that existing evidence is assessed for its treatment of sex and gender and to enable strategies to counter inequity and discrimination.
7. Develop a central database of clinical guidelines and require consideration of sex and gender in all NHMRC-endorsed endeavours.
8. There needs to be continuing research on any major differences in the nature, prevalence, and burdens in health problems experienced by women, men, and people of all sexes and genders that influence their needs for health care.
9. Encourage moving beyond simple binaries in sex and gender in medical research and practice.
10. Practise inclusive health care for gender diverse people.
11. For maximum influence, the findings of this report need to be widely distributed.

Recommendations

The following recommendations arise from the results of this literature review.

1. **Ensure that the terms and concepts of “sex” and “gender” are defined and used accurately in relation to health care.** The terms “sex” and “gender” need to be appropriately and accurately used and described in all documents related to health care, including policies, journal articles, technical reports, and guidelines. Sex refers to biological traits while gender encompasses social roles and cultural expectations traditionally associated with a female-male sex binary. When sex and gender are conflated, the contributions of biology and sociocultural influences on health care cannot be distinguished, obliterating opportunities for appropriate identification of specific risk and protective factors, symptom patterns, interventions, and care. The Australian Bureau of Statistics Standard for Sex, Gender, Variations of Sex Characteristics and Sexual Orientation Variables (2020: abs.gov.au) is a useful guide.

2. **Introduce and continue culturally sensitive training for healthcare professionals that includes an intersectional and multilingual approach.**

Women who are culturally and linguistically diverse and socioeconomically disadvantaged confront barriers to adequate health care in addition to those arising from sex and gender bias and discrimination. There is ample evidence that First Nations women and women who are migrants, refugees, and asylum seekers, as well as those who live in remote areas, experience poorer health outcomes than other population groups. Rather than burdening them with sole responsibility for overcoming these barriers, such as demanding greater health literacy of health consumers (although health education is a useful adjunct), healthcare providers themselves should receive training in cultural sensitivity, multilingualism, and intersectionality as part of a literate health system capable of providing fully informed care. Consultation with women and women's groups in culturally and linguistically diverse communities is an essential component of providing sensitive health care. The heterogeneity of practices and beliefs about health, including sexual and reproductive health, means that researchers and healthcare professionals need to take responsibility for understanding women's sociocultural context in order to provide the most appropriate care and to explain it in a culturally appropriate way. Where possible in clinical practice, securing qualified female interpreters can minimise confusion and misinterpretation. Telehealth consultations can potentially improve access to health care in remote areas if internet connection is adequate and affordable and privacy can be assured. Furthermore, the cost of healthcare can be a significant barrier to women who are culturally and linguistically diverse and socioeconomically disadvantaged; bulk billing should be freely available to ensure adequate access to health care.

3. **There should be undergraduate, postgraduate, and continuing professional education that ensures sex and gender awareness in quality of care for all health professions.**

Continuing educational interventions directed at healthcare professionals have the potential to reduce unconscious bias, increase sex and gender awareness, and improve health care. Educational interventions will incorporate awareness of and commitment to assessing gender-based risks, including experiences of violent victimisation and the burdens of unpaid work. Routinely alerting clinicians to sex- and gender-based outcomes, when these are identified through rigorous data collection and analysis, has been shown to reduce bias and improve quality of care. Such education and intervention could be institution-based, from undergraduate level onward, or conducted by discipline-specific organisations. Overseas-trained professionals should be included. The goal of education and training should be to go beyond awareness-raising to transformation of norms, language, attitudes, and behaviours. Strategies should be introduced to ensure that sex and gender awareness is maintained.

4. **Ensure that sex and gender discrimination in health care, as well as sex and gender differences in health states and outcomes, are addressed in research, both to enable understanding and to intervene for change.**

In addition to research that investigates sex and gender differences (that is, focused on individuals and categories of people), we need research on bias and discrimination in health care (that is, focused on systems, policies, institutions, and providers). Such evidence is essential for addressing bias and discrimination and identifying progress being made in sex- and gender-aware health care. It is likely to require an explicit call from funding bodies for research on sex and gender discrimination, as well as inclusion of consumers in research design. Underpinning this work should be a requirement from all funding bodies, but especially Commonwealth funding agencies, that research on health and medicine should consider sex and gender.

5. **Journal editors need to be supported to ensure that the existing criteria and recommendations for sex- and gender-aware publication practices are implemented and enforced.** Despite recognition of the importance of sex inclusiveness in clinical research and randomised controlled trials, sex bias is prevalent and sex and gender data are poorly reported in many leading medical journals. These findings cast doubt on the generalisability of research results and the validity of applying these results to the treatment women and sex- and gender-diverse people. Encouragement should be given to editors to adhere to the sex and gender criteria and recommendations of the International Committee of Medical Journal Editors guidelines. At the most basic level, researchers should be expected to specify how participants' sex and gender were identified. When journal editors set and maintain high standards of sex and gender awareness this is likely to have a beneficial influence on research practice.
6. **Encourage the inclusion of sex and gender awareness in all clinical guidelines, so that existing evidence is assessed for its treatment of sex and gender and to enable strategies to counter inequity and discrimination.** Evidence from this review indicates that paying attention to the development of sex and gender awareness in clinical guidelines is likely to be more effective (having a wider sphere of influence) than numerous small interventions. (Of course, the latter can have local benefits.) Although guidelines are built on existing evidence, such evidence should be assessed for the ways in which it deals with sex and gender. Standardised, equitable, and evidence-based rules for treatment have the potential to reduce implicit bias that affects health care. Clinical guidelines are considered to be living rather than fixed documents, emphasising the need for healthcare professionals and researchers to be reflexive about their practice. When developing or updating guidelines, the members of committees and working groups, colleges, and other relevant organisations need to make a concerted effort to include sex- and gender-related matters relevant to the identification, appraisal, and description of evidence. A process of collaborative co-design rather than individual or fragmented actions is imperative to the implementation of this approach. In addition, clinical guideline development bodies should develop transparent policies for increasing the participation of women in guideline development panels. Finally, guideline development instruments, such as AGREE II and GRADE, need to include instructions for synthesising sex and gender evidence. A statement about lack of sex- or gender-specific evidence should be the minimum requirement for clinical practice guidelines.
7. **Develop a central database of clinical guidelines and require consideration of sex and gender in all NHMRC-endorsed endeavours.** The National Health and Medical Research Council could contribute to the awareness of existing guidelines and the creation of new guidelines by developing or funding development of a central database on which all clinical guidelines in Australia are recorded. The NHMRC should provide guidance in sex and gender awareness, approve and endorse only guidelines that include consideration of sex and gender, and require consideration of sex and gender in all new grants.

8. **There needs to be continuing research on any major differences in the nature, prevalence, and burdens in health problems experienced by women, men, and people of all sexes and genders that influence their needs for health care.** Sex- and gender-aware research on the nature, prevalence, and burdens of major differences in health problems experienced by people of all sexes and genders is an essential underpinning of attempts to reduce bias and discrimination in health care. Specific areas of health and health care are likely to be extensive and diverse, but are expected to include mental health, sexual and reproductive health, non-communicable diseases, and infectious diseases. Social determinants of health, such as cultural background and geographic place of residence, will be essential components of this research.
9. **Encourage moving beyond simple binaries in sex and gender in medical research and practice.** In this literature review, most research participants were identified by binary categories that applied to their biological sex, frequently called gender. The use of simple binaries in both sex and gender excludes those people who are intersex, who have transitioned from the sex they were allocated at birth, and who identify as non-binary. It can also blind researchers and healthcare providers to significant relationships that do not fit the traditional heterosexual model based on binary sex and gender, thus reducing the opportunity for good quality care. It is suggested that non-binary approaches are reflected in research design, data collection, data analysis, and language used. A non-binary approach is likely to be more achievable in qualitative than quantitative research methods where statistical significance might not be possible with small numbers in diverse categories. When this is the case, the use of binaries should be noted as a limitation.
10. **Practise inclusive health care for gender diverse people.** Gender diverse people require distinct healthcare and support, based on inclusive and non-discriminatory practice and policy. Conventional data collection and analysis, including in hospitals, are based on the assumption of binary sex and tends to ignore gender altogether. This assumption harms or excludes from care those who do not fit the woman/man, female/male binaries. Discrimination experienced by transgender and gender diverse patients in the healthcare setting arises both from inadequate education and the belief that diversity equals deviance. Each of these results in inadequate care and psychological injury. Education and training of healthcare providers on the psychosocial aspects of gender diversity, as well as on healthcare screening, diagnosis, and treatment specific to this population, may reduce the barriers faced by gender diverse patients in receiving quality care.
11. **For maximum influence, the findings of this report need to be widely distributed.** Given the potential for contributing to improved health care that is sex- and gender-informed, this report needs to be easily accessible. The major findings should be published in peer-reviewed journals. The conclusions should be widely disseminated using a comprehensive communications strategy with policy briefs, contributions to publications such as The Conversation, local language summaries, podcasts, animated explanatory videos, and possibly social media.

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Appendices

Appendix A. Concept Grids and Database Search Strategies for Each Question

Table A1.

Concept grid for research question 1: What are the barriers to gender equity in health care and services experienced by women and girls in Australia?

| CONCEPT GRID | MeSH terms | Textwords |
|--|---------------------------|---|
| Problem Gender bias | Gender Equity/ Sexism/ | (gendered approach* or gender-specific or gender sensitive or gender perspective*).mp. ((gender or sex or gender-based or sex-based) adj (equality or equity or inequit* or inequalit* or bias* or disparit* or discrimination or prejudice)).mp. |
| Interest Female patients | Women/ | (wom#n or girl? or mother? or wife or wives or female?).mp. |
| Context Healthcare providers | Health Personnel/ | ((health care or healthcare or health or medical or surgical or hospital or clinic*) adj2 (provider* or delivery)).mp. (general practitioner* or medical practitioner*).mp. ((health service or healthcare service or health care service or hospital service) adj2 (provider* or delivery)).mp. ((outpatient or out-patient) adj clinic?).mp. community health cent*.mp. (health centre* or health center?).mp. |

Box A1. List of textwords and keywords combinations

((health care or healthcare or health or medical or surgical or hospital or clinic*) adj5 (provider* or providing or provision or delivery) adj10 (gendered approach* or gender-specific or gender sensitive or gender perspective*)).mp.

((gender or sex or gender-based or sex-based) adj (equality or equity or inequit* or inequalit* or bias* or disparit* or discrimination or prejudice) adj10 ((health care or healthcare or health or medical or surgical or hospital or clinic*) adj2 (provider* or delivery))).mp.

((gender or sex or gender-based or sex-based) adj4 (equality or equity or inequit* or inequalit* or bias* or disparit* or discrimination or prejudice) adj10 (general practitioner* or medical practitioner* or health centre* or health center?)).mp.

((gendered approach* or gender-specific or gender sensitive or gender perspective*) adj10 (general practitioner* or medical practitioner* or health centre* or health center?)).mp.

((gender or sex or gender-based or sex-based) adj (equality or equity or inequit* or inequalit* or bias* or disparit* or discrimination or prejudice) adj10 ((health service or healthcare service or health care service or hospital service) adj2 (provider* or delivery))).mp.

((gender or sex or gender-based or sex-based) adj4 (equality or equity or inequit* or inequalit* or bias* or disparit* or discrimination or prejudice) adj10 (health service or healthcare service or health care service or hospital service) adj5 (provider* or providing or provision or delivery)).mp.

Table A2. MEDLINE Search History for Question 1

| # | Search Statement | Results |
|----|--|----------|
| 1 | Gender Equity/ or Sexism/ | 4003 |
| 2 | (gendered approach* or gender-specific or gender sensitive or gender perspective*).mp. | 16392 |
| 3 | ((gender or sex or gender-based or sex-based) adj (equality or equity or inequit* or inequalit* or bias* or disparit* or discrimination or prejudice)).mp. | 18042 |
| 4 | 1 or 2 or 3 | 35494 |
| 5 | Women/ | 15200 |
| 6 | (wom#n or girl? or mother? or wife or wives or female?).mp. | 10214608 |
| 7 | 5 or 6 | 10214608 |
| 8 | exp Health Personnel/ | 624526 |
| 9 | ((health care or healthcare or health or medical or surgical or hospital or clinic*) adj2 (provider* or delivery)).mp. | 264876 |
| 10 | 4 and 7 and 8 | 2134 |
| 11 | 4 and 7 and 9 | 717 |
| 12 | (general practitioner* or medical practitioner*).mp. | 68457 |
| 13 | 4 and 7 and 12 | 138 |

| # | Search Statement | Results |
|----|--|---------|
| 14 | ((health service or healthcare service or health care service or hospital service) adj2 (provider* or delivery)).mp. | 5250 |
| 15 | 4 and 7 and 14 | 22 |
| 16 | ((outpatient or out-patient) adj clinic?).mp. | 54003 |
| 17 | 4 and 7 and 16 | 67 |
| 18 | community health cent*.mp. | 11120 |
| 19 | 4 and 7 and 18 | 17 |
| 20 | (health centre* or health center?).mp. | 47792 |
| 21 | 4 and 7 and 20 | 117 |
| 22 | 10 or 11 or 13 or 15 or 17 or 19 or 21 | 2942 |
| 23 | limit 22 to English language | 2795 |
| 24 | exp Observation/ or exp Epidemiologic Studies/ or exp Case-Control Studies/ or exp Cohort Studies/ or exp Controlled Before-After Studies/ or exp Cross-sectional Studies/ or exp Clinical Trials/ | 3229933 |
| 25 | ((observation* or epidemiolog* or case-control or cohort or before-after or cross-sectional or "before and after" or crosssectional) adj (study or studies)).mp. | 1716040 |
| 26 | Evidence Based Practice/ | 12170 |
| 27 | guideline*.mp. | 623097 |
| 28 | (program* adj3 (develop* or implement*)).mp. | 116674 |
| 29 | 24 or 25 or 26 or 27 or 28 | 4224775 |
| 30 | 23 and 29 | 782 |
| 31 | limit 30 to yr="2014 -Current" | 587 |
| 32 | ((health care or healthcare or health or medical or surgical or hospital or clinic*) adj5 (provider* or providing or provision or delivery) adj10 (gendered approach* or gender-specific or gender sensitive or gender perspective*)).mp. | 77 |
| 33 | ((gender or sex or gender-based or sex-based) adj (equality or equity or inequit* or inequalit* or bias* or disparit* or discrimination or prejudice) adj10 ((health care or healthcare or health or medical or surgical or hospital or clinic*) adj2 (provider* or delivery))).mp. | 53 |
| 34 | ((gender or sex or gender-based or sex-based) adj4 (equality or equity or inequit* or inequalit* or bias* or disparit* or discrimination or prejudice) adj10 (general practitioner* or medical practitioner* or health centre* or health center?)).mp. | 23 |
| 35 | ((gendered approach* or gender-specific or gender sensitive or gender perspective*) adj10 (general practitioner* or medical practitioner* or health centre* or health center?)).mp. | 19 |
| 36 | ((gender or sex or gender-based or sex-based) adj (equality or equity or inequit* or inequalit* or bias* or disparit* or discrimination or prejudice) adj10 ((health service or healthcare service or health care service or hospital service) adj2 (provider* or delivery))).mp. | 2 |
| 37 | ((gender or sex or gender-based or sex-based) adj4 (equality or equity or inequit* or inequalit* or bias* or disparit* or discrimination or prejudice) adj10 (health service or healthcare service or health care service or hospital service) adj5 (provider* or providing or provision or delivery)).mp. | 3 |
| 38 | 32 or 33 or 34 or 35 or 36 or 37 | 170 |
| 39 | 29 and 38 | 58 |
| 40 | limit 39 to (English language and yr="2014 -Current") | 37 |
| 41 | 31 or 40 | 596 |

Table A3. Embase Search History for Question 1

| # | Search Statement | Results |
|----|---|------------|
| 1 | Gender Equality/ or Sexism/ | 5,863 |
| 2 | (gendered approach* or gender-specific or gender sensitive or gender perspective*).mp. | 21,794 |
| 3 | ((gender or sex or gender-based or sex-based) adj (equality or equity or inequit* or inequalit* or bias* or disparit* or discrimination or prejudice)).mp. | 24,490 |
| 4 | 1 or 2 or 3 | 48,326 |
| 5 | Women/ | 11,826,082 |
| 6 | (wom#n or girl? or mother? or wife or wives or female?).mp. | 12,911,327 |
| 7 | 5 or 6 | 12,911,327 |
| 8 | exp Health Personnel/ | 2,089,425 |
| 9 | ((health care or healthcare or health or medical or surgical or hospital or clinic*) adj2 (provider* or delivery)).mp. | 369,237 |
| 10 | 4 and 7 and 8 | 5,097 |
| 11 | 4 and 7 and 9 | 1,065 |
| 12 | (general practitioner* or medical practitioner*).mp. | 166,645 |
| 13 | 4 and 7 and 12 | 306 |
| 14 | ((health service or healthcare service or health care service or hospital service) adj2 (provider* or delivery)).mp. | 6,154 |
| 15 | 4 and 7 and 14 | 31 |
| 16 | ((outpatient or out-patient) adj clinic?).mp. | 71,194 |
| 17 | 4 and 7 and 16 | 110 |
| 18 | health cent*.mp. | 84,915 |
| 19 | 4 and 7 and 18 | 214 |
| 20 | (health centre* or health center?).mp. | 84,635 |
| 21 | 4 and 7 and 20 | 213 |
| 22 | 10 or 11 or 13 or 15 or 17 or 19 or 21 | 6,069 |
| 23 | limit 22 to English language | 5,889 |
| 24 | exp Observation/ or exp Epidemiologic Studies/ or exp Case-Control Studies/ or exp Cohort Studies/ or exp Controlled Before-After Studies/ or exp Cross-Sectional Studies/ or exp Clinical Trials/ | 5,844,549 |
| 25 | ((observation* or epidemiolog* or case-control or cohort or before-after or cross-sectional or "before and after" or crossectional) adj (study or studies)).mp. | 1,839,278 |
| 26 | Evidence Based Practice/ | 87,572 |
| 27 | guideline*.mp. | 1,014,801 |
| 28 | (program* adj3 (develop* or implement*)).mp. | 141,132 |
| 29 | 24 or 25 or 26 or 27 or 28 | 7,058,084 |
| 30 | 23 and 29 | 2,258 |
| 31 | limit 30 to yr="2014 -Current" | 1,678 |
| 32 | ((health care or healthcare or health or medical or surgical or hospital or clinic*) adj5 (provider* or providing or provision or delivery) adj10 (gendered approach* or gender-specific or gender sensitive or gender perspective*)).mp. | 88 |
| 33 | ((gender or sex or gender-based or sex-based) adj (equality or equity or inequit* or inequalit* or bias* or disparit* or discrimination or prejudice) adj10 ((health care or healthcare or health or medical or surgical or hospital or clinic*) adj2 (provider* or delivery))).mp. | 113 |

| # | Search Statement | Results |
|----|--|---------|
| 34 | ((gender or sex or gender-based or sex-based) adj4 (equality or equity or inequit* or inequalit* or bias* or disparit* or discrimination or prejudice) adj10 (general practitioner* or medical practitioner* or health centre* or health center?)).mp. | 88 |
| 35 | ((gendered approach* or gender-specific or gender sensitive or gender perspective*) adj10 (general practitioner* or medical practitioner* or health centre* or health center?)).mp. | 22 |
| 36 | ((gender or sex or gender-based or sex-based) adj (equality or equity or inequit* or inequalit* or bias* or disparit* or discrimination or prejudice) adj10 ((health service or healthcare service or health care service or hospital service) adj2 (provider* or delivery))).mp. | 3 |
| 37 | ((gender or sex or gender-based or sex-based) adj4 (equality or equity or inequit* or inequalit* or bias* or disparit* or discrimination or prejudice) adj10 (health service or healthcare service or health care service or hospital service) adj5 (provider* or providing or provision or delivery)).mp. | 6 |
| 38 | 32 or 33 or 34 or 35 or 36 or 37 | 311 |
| 39 | 29 and 38 | 151 |
| 40 | limit 39 to (English language and yr="2014 -Current") | 103 |
| 41 | 31 or 40 | 1,683 |

Table A4. PsycInfo Search History for Question 1

| # | Search Statement | Results |
|----|--|-----------|
| 1 | Gender Equality/ or Sexism/ | 5,554 |
| 2 | (gendered approach* or gender-specific or gender sensitive or gender perspective*).mp. | 8,068 |
| 3 | ((gender or sex or gender-based or sex-based) adj (equality or equity or inequit* or inequalit* or bias* or disparit* or discrimination or prejudice)).mp. | 15,923 |
| 4 | 1 or 2 or 3 | 26,049 |
| 5 | Women/ | 98,149 |
| 6 | (wom#n or girl? or mother? or wife or wives or female?).mp. | 1,434,026 |
| 7 | 5 or 6 | 1,434,026 |
| 8 | exp Health Personnel/ | 196,279 |
| 9 | ((health care or healthcare or health or medical or surgical or hospital or clinic*) adj2 (provider* or delivery)).mp. | 67,195 |
| 10 | 4 and 7 and 8 | 524 |
| 11 | 4 and 7 and 9 | 270 |
| 12 | (general practitioner* or medical practitioner*).mp. | 14,675 |
| 13 | 4 and 7 and 12 | 50 |
| 14 | ((health service or healthcare service or health care service or hospital service) adj2 (provider* or delivery)).mp. | 3,007 |
| 15 | 4 and 7 and 14 | 14 |
| 16 | ((outpatient or out-patient) adj clinic?).mp. | 9,318 |
| 17 | 4 and 7 and 16 | 16 |
| 18 | health cent*.mp. | 13,994 |
| 19 | 4 and 7 and 18 | 38 |
| 20 | (health centre* or health center?).mp. | 13,938 |
| 21 | 4 and 7 and 20 | 38 |
| 22 | 10 or 11 or 13 or 15 or 17 or 19 or 21 | 841 |

| # | Search Statement | Results |
|----|--|---------|
| 23 | limit 22 to English language | 808 |
| 24 | exp Observation/ or exp Epidemiologic Studies/ or exp Case-Control Studies/ or exp Cohort Studies/ or exp Controlled Before-After Studies/ or exp Cross-Sectional Studies/ or exp Clinical Trials/ | 13,762 |
| 25 | ((observation* or epidemiolog* or case-control or cohort or before-after or cross-sectional or "before and after" or crosssectional) adj (study or studies)).mp. | 219,412 |
| 26 | Evidence Based Practice/ | 21,241 |
| 27 | guideline*.mp. | 86,114 |
| 28 | (program* adj3 (develop* or implement*)).mp. | 59,725 |
| 29 | 24 or 25 or 26 or 27 or 28 | 384,963 |
| 30 | 23 and 29 | 133 |
| 31 | limit 30 to yr="2014 -Current" | 67 |
| 32 | ((health care or healthcare or health or medical or surgical or hospital or clinic*) adj5 (provider* or providing or provision or delivery) adj10 (gendered approach* or gender-specific or gender sensitive or gender perspective*)).mp. | 43 |
| 33 | ((gender or sex or gender-based or sex-based) adj (equality or equity or inequit* or inequalit* or bias* or disparit* or discrimination or prejudice) adj10 ((health care or healthcare or health or medical or surgical or hospital or clinic*) adj2 (provider* or delivery))).mp. | 23 |
| 34 | ((gender or sex or gender-based or sex-based) adj4 (equality or equity or inequit* or inequalit* or bias* or disparit* or discrimination or prejudice) adj10 (general practitioner* or medical practitioner* or health centre* or health center?)).mp. | 9 |
| 35 | ((gendered approach* or gender-specific or gender sensitive or gender perspective*) adj10 (general practitioner* or medical practitioner* or health centre* or health center?)).mp. | 6 |
| 36 | ((gender or sex or gender-based or sex-based) adj (equality or equity or inequit* or inequalit* or bias* or disparit* or discrimination or prejudice) adj10 ((health service or healthcare service or health care service or hospital service) adj2 (provider* or delivery))).mp. | 0 |
| 37 | ((gender or sex or gender-based or sex-based) adj4 (equality or equity or inequit* or inequalit* or bias* or disparit* or discrimination or prejudice) adj10 (health service or healthcare service or health care service or hospital service) adj5 (provider* or providing or provision or delivery)).mp. | 0 |
| 38 | 32 or 33 or 34 or 35 or 36 or 37 | 80 |
| 39 | 29 and 38 | 16 |
| 40 | limit 39 to (English language and yr="2014 -Current") | 8 |
| 41 | 31 or 40 | 71 |

Table A5. Emcare Search History for Question 1

| # | Search Statement | Results |
|---|--|---------|
| 1 | Gender Equality/ or Sexism/ | 2,902 |
| 2 | (gendered approach* or gender-specific or gender sensitive or gender perspective*).mp. | 8,877 |
| 3 | ((gender or sex or gender-based or sex-based) adj (equality or equity or inequit* or inequalit* or bias* or disparit* or discrimination or prejudice)).mp. | 10,623 |
| 4 | 1 or 2 or 3 | 20,735 |

| # | Search Statement | Results |
|----|---|-----------|
| 5 | Women/ | 1,916,479 |
| 6 | (wom#n or girl? or mother? or wife or wives or female?).mp. | 2,300,457 |
| 7 | 5 or 6 | 2,300,457 |
| 8 | exp Health Personnel/ | 743,556 |
| 9 | ((health care or healthcare or health or medical or surgical or hospital or clinic*) adj2 (provider* or delivery)).mp. | 135,064 |
| 10 | 4 and 7 and 8 | 1,733 |
| 11 | 4 and 7 and 9 | 414 |
| 12 | (general practitioner* or medical practitioner*).mp. | 57,383 |
| 13 | 4 and 7 and 12 | 133 |
| 14 | ((health service or healthcare service or health care service or hospital service) adj2 (provider* or delivery)).mp. | 3,935 |
| 15 | 4 and 7 and 14 | 20 |
| 16 | ((outpatient or out-patient) adj clinic?).mp. | 16,631 |
| 17 | 4 and 7 and 16 | 28 |
| 18 | health cent*.mp. | 31,014 |
| 19 | 4 and 7 and 18 | 104 |
| 20 | (health centre* or health center?).mp. | 30,902 |
| 21 | 4 and 7 and 20 | 104 |
| 22 | 10 or 11 or 13 or 15 or 17 or 19 or 21 | 2,093 |
| 23 | limit 22 to English language | 2,001 |
| 24 | exp Observation/ or exp Epidemiologic Studies/ or exp Case-Control Studies/ or exp Cohort Studies/ or exp Controlled Before-After Studies/ or exp Cross-Sectional Studies/ or exp Clinical Trials/ | 990,482 |
| 25 | ((Observation* or epidemiolog* or case-control or cohort or before-after or cross-sectional or "before and after" or crosssectional) adj (study or studies)).mp. | 513,772 |
| 26 | Evidence Based Practice/ | 37,859 |
| 27 | guideline*.mp. | 290,187 |
| 28 | (program* adj3 (develop* or implement*)).mp. | 51,207 |
| 29 | 24 or 25 or 26 or 27 or 28 | 1,522,913 |
| 30 | 23 and 29 | 641 |
| 31 | limit 30 to yr="2014 -Current" | 371 |
| 32 | ((health care or healthcare or health or medical or surgical or hospital or clinic*) adj5 (provider* or providing or provision or delivery) adj10 (gendered approach* or gender-specific or gender sensitive or gender perspective*)).mp. | 59 |
| 33 | ((gender or sex or gender-based or sex-based) adj (equality or equity or inequit* or inequalit* or bias* or disparit* or discrimination or prejudice) adj10 ((health care or healthcare or health or medical or surgical or hospital or clinic*) adj2 (provider* or delivery))).mp. | 50 |
| 34 | ((gender or sex or gender-based or sex-based) adj4 (equality or equity or inequit* or inequalit* or bias* or disparit* or discrimination or prejudice) adj10 (general practitioner* or medical practitioner* or health centre* or health center?)).mp. | 36 |
| 35 | ((gendered approach* or gender-specific or gender sensitive or gender perspective*) adj10 (general practitioner* or medical practitioner* or health centre* or health center?)).mp. | 10 |
| 36 | ((gender or sex or gender-based or sex-based) adj (equality or equity or inequit* or inequalit* or bias* or disparit* or discrimination or prejudice) adj10 ((health service or healthcare service or health care service or hospital service) adj2 (provider* or delivery))).mp. | 2 |

| # | Search Statement | Results |
|----|--|---------|
| 37 | ((gender or sex or gender-based or sex-based) adj4 (equality or equity or inequit* or inequalit* or bias* or disparit* or discrimination or prejudice) adj10 (health service or healthcare service or health care service or hospital service) adj5 (provider* or providing or provision or delivery)).mp. | 4 |
| 38 | 32 or 33 or 34 or 35 or 36 or 37 | 156 |
| 39 | 29 and 38 | 59 |
| 40 | limit 39 to (English language and yr="2014 -Current") | 31 |
| 41 | 31 or 40 | 379 |

Table A6.

Concept Grid for Research question 3: What existing measures/ health promotion tools/ interventions/ programs are there in Australia and overseas that apply a gendered approach?,

and

Research question 4: Are there any existing measures/ health promotion tools/ interventions/ programs that could be tailored and piloted nationally to improve health equity and health literacy for women in priority populations?

| CONCEPT GRID | MeSH terms | Textwords |
|--|--|--|
| Population Women | Women | wom#n or girl? or mother? or wife or wives or female? |
| Intervention Health / clinical interventions | <p>Concept 1: Health Promotion; Health Campaign; Wellness Program</p> <p>Concept 2: Treatments; Therapeutics; Therapies; Health Service; Healthcare; Surgery; Diagnostic Test; Clinical Pathology; Pharmacy; Pharmaceutical Preparation; Equipment And Supplies; Clinical Practice</p> <p>Concept 3: Education; Teaching; Counselling; Mentoring</p> | <p>((wom?n or female or maternal or mother* or girl* or wi?e* or adult* or young adult*) adj7 (health promotion or health campaign or wellbeing)</p> <p>((wom?n or female or maternal or mother* or girl* or wi?e* or adult* or young adult*) adj7 (treatments or therapeutics or therapies or health service or healthcare or surgery or diagnostic test or clinical pathology or pharmacy or pharmaceutical preparation or equipment and supplies or clinical practice)</p> <p>(educat* or counsel* teach* or mentor*).mp.</p> |
| Outcome Gender bias / equity | Concept 1: Gender Equity; Sexism | ((wom?n or female or maternal or mother* or girl* or wi?e* or adult* or young adult*) adj7 (gender equality or gender inequality or gender bias or |

| CONCEPT GRID | MeSH terms | Textwords |
|--------------------------|--|--|
| | <p>Concept 2: Health Literacy; Health Knowledge, Attitudes And Practice</p> <p>Concept 3: Guidelines; Practice Guidelines</p> | <p>gender disparities or gender-based discrimination or sexism or sex bias or sex disparities or sex discrimination or prejudice or healthcare disparities)</p> <p>((wom?n or female or maternal or mother* or girl* or wi?e* or adult* or young adult*) adj7 (health literacy or health knowledge or attitudes and practice)</p> <p>(Guideline* or Practice guideline*).mp.</p> |
| Study type Evaluation | <p>Observation; Epidemiologic Studies; Case-Control Studies; Cohort Studies; Controlled Before-After Studies; Cross-Sectional Studies; Clinical Trials</p> | <p>((observation* or epidemiolog* or case-control or cohort or before-after or cross-sectional or "before and after" or crosssectional) adj (study or studies)).mp.</p> <p>(patient outcome* or outcome assess*).mp.</p> <p>(program* adj3 (develop* or implement*)).mp.</p> |

Table A7. MEDLINE Search History for Questions 3 and 4

| # | Search Statement | Results |
|---|--|---------|
| 1 | Gender Equity/ or Sexism/ | 4003 |
| 2 | (gendered approach* or gender-specific or gender sensitive or gender perspective*).mp. | 16392 |
| 3 | ((gender or sex or gender-based or sex-based) adj (equality or equity or inequit* or inequalit* or bias* or disparit* or discrimination or prejudice)).mp. | 18042 |
| 4 | 1 or 2 or 3 | 35494 |
| 5 | Therapeutics/ or Drug Therapy/ or Patient Care/ | 51908 |
| 6 | exp Health Services/ | 2460334 |
| 7 | Patient Care Management/ or Comprehensive Dental Care/ or Patient Care Planning/ or Primary Health Care/ or "Continuity Of Patient Care"/ or Patient-Centered Care/ or Progressive Patient Care/ or "Delivery Of Health Care"/ or "Delivery Of Health Care, Integrated"/ or Health Services Accessibility/ or Access To Primary Care/ or Health Equity/ or Right To Health/ or Universal Health Care/ or Healthcare Disparities/ or Disease Management/ or Pain Management/ or "Medication Review"/ or Patient Care Team/ or Patient Selection/ or "Quality Of Health Care"/ or Outcome Assessment, Health Care/ or Patient Outcome Assessment/ or Patient Reported Outcome Measures/ or Quality Assurance, Health Care/ or Quality Indicators, Health Care/ | 788443 |
| 8 | Health Planning/ or Health Care Rationing/ or "Health Services Needs and Demand"/ or National Health Programs/ or State Medicine/ | 175851 |

| # | Search Statement | Results |
|----|---|----------|
| 9 | Pharmaceutical Services/ or Preventive Health Services/ or Diagnostic Services/ | 26274 |
| 10 | "Diagnostic Techniques and Procedures"/ or Diagnostic Imaging/ | 50268 |
| 11 | 5 or 6 or 7 or 8 or 9 or 10 | 3104939 |
| 12 | 4 and 11 | 5057 |
| 13 | Women/ | 15200 |
| 14 | (wom#n or girl? or mother? or wife or wives or female?).mp. | 10214608 |
| 15 | 13 or 14 | 10214608 |
| 16 | 12 and 15 | 4609 |
| 17 | Health Education/ or Health Literacy/ or Health Fairs/ or Health Promotion/ | 148160 |
| 18 | Health Knowledge, Attitudes, Practice/ | 127666 |
| 19 | (health adj (promotion or literacy or education or knowledge or counsel* or teach* or mentor*)).mp. | 319851 |
| 20 | 17 or 18 or 19 | 320075 |
| 21 | 16 and 20 | 684 |
| 22 | ((wom#n or girl? or mother? or wife or wives or female?) adj7 (health adj (promotion or literacy or education or knowledge))).mp. | 83194 |
| 23 | 4 and 22 | 443 |
| 24 | ((wom#n or girl? or mother? or wife or wives or female?) adj4 (treatment* or therapeutic* or therapies or health service* or healthcare or health care or surgical procedure* or diagnostic test* or clinical pathology or pharmacy or pharmaceutical preparation* or medical equipment or medical device* or clinical practice)).mp. | 65050 |
| 25 | 4 and 24 | 1113 |
| 26 | ((wom#n or girl? or mother? or wife or wives or female?) adj5 ((health or healthcare or health care) adj5 (educat* or counsel* or teach* or mentor*))).mp. | 22316 |
| 27 | 4 and 26 | 161 |
| 28 | Sex Factors/ | 279615 |
| 29 | 4 and 11 and 15 and 28 | 1547 |
| 30 | 4 and 15 and 20 and 28 | 310 |
| 31 | 21 or 23 or 25 or 27 or 29 or 30 | 3309 |
| 32 | limit 31 to English language | 3162 |
| 33 | exp Observation/ or exp Epidemiologic Studies/ or exp Case-Control Studies/ or exp Cohort Studies/ or exp Controlled Before-After Studies/ or exp Cross-sectional Studies/ or exp Clinical Trials/ | 3229933 |
| 34 | ((observation* or epidemiolog* or case-control or cohort or before-after or cross-sectional or "before and after" or crosssectional) adj (study or studies)).mp. | 1716040 |
| 35 | Evidence Based Practice/ | 12170 |
| 36 | guideline*.mp. | 623097 |
| 37 | (program* adj3 (develop* or implement*)).mp. | 116674 |
| 38 | 33 or 34 or 35 or 36 or 37 | 4224775 |
| 39 | 32 and 38 | 1173 |
| 40 | limit 39 to yr="2014 -Current" | 662 |

Table A8. Embase Search History for Questions 3 and 4

| # | Search Statement | Results |
|----|--|------------|
| 1 | Gender Equity/ or Sexism/ | 6,247 |
| 2 | (gendered approach* or gender-specific or gender sensitive or gender perspective*).mp. | 21,794 |
| 3 | ((gender or sex or gender-based or sex-based) adj (equality or equity or inequit* or inequalit* or bias* or disparit* or discrimination or prejudice)).mp. | 24,490 |
| 4 | 1 or 2 or 3 | 48,326 |
| 5 | Therapeutics/ or Drug Therapy/ or Patient Care/ | 2,437,715 |
| 6 | exp Health Services/ | 7,244,382 |
| 7 | Patient Care Management/ or Dental Procedure/ or Patient Care Planning/ or Primary Health Care/ or "Continuity Of Patient Care"/ or Patient-Centered Care/ or "Delivery Of Health Care"/ or "Delivery Of Health Care, Integrated"/ or Health Care Access/ or Primary Care Access/ or Health Equity/ or Right To Health/ or Universal Health Care/ or Healthcare Disparities/ or Disease Management/ or Analgesia/ or "Drug Utilization Review"/ or Patient Care Team/ or Patient Selection/ or Health Care Quality/ or Outcome Assessment, Health Care/ or Patient Outcome Assessment/ or Patient Reported Outcome Measures/ or Quality Control/ | 2,284,326 |
| 8 | Health Planning/ or Health Care Rationing/ or "Health Services Needs And Demand"/ or National Health Programs/ or State Medicine/ | 643,104 |
| 9 | Pharmaceutical Services/ or Preventive Health Services/ or Diagnostic Services/ | 44,315 |
| 10 | "Diagnostic Techniques and Procedures"/ | 100,507 |
| 11 | 5 or 6 or 7 or 8 or 9 or 10 | 9,976,439 |
| 12 | 4 and 11 | 15,123 |
| 13 | Women/ | 11,826,082 |
| 14 | (wom#n or girl? or mother? or wife or wives or female?).mp. | 12,911,327 |
| 15 | 13 or 14 | 12,911,327 |
| 16 | 12 and 15 | 12,960 |
| 17 | Health Education/ or Health Literacy/ or Health Fairs/ or Health Promotion/ | 235,789 |
| 18 | Health Knowledge, Attitudes, Practice/ | 111,807 |
| 19 | (health adj (promotion or literacy or education or knowledge or counsel* or teach* or mentor*)).mp. | 288,260 |
| 20 | 17 or 18 or 19 | 380,493 |
| 21 | 16 and 20 | 702 |
| 22 | ((wom#n or girl? or mother? or wife or wives or female?) adj7 (health adj (promotion or literacy or education or knowledge))).mp. | 38,775 |
| 23 | 4 and 22 | 278 |
| 24 | ((wom#n or girl? or mother? or wife or wives or female?) adj4 (treatment* or therapeutic* or therapies or health service* or healthcare or health care or surgical procedure* or diagnostic test* or clinical pathology or pharmacy or pharmaceutical preparation* or medical equipment or medical device* or clinical practice)).mp. | 96,310 |
| 25 | 4 and 24 | 1,480 |
| 26 | ((wom#n or girl? or mother? or wife or wives or female?) adj5 ((health or healthcare or health care) adj5 (educat* or counsel* or teach* or mentor*))).mp. | 36,058 |
| 27 | 4 and 26 | 236 |

| # | Search Statement | Results |
|----|--|-----------|
| 28 | Sex Factors/ | 12,610 |
| 29 | 4 and 11 and 15 and 28 | 131 |
| 30 | 4 and 15 and 20 and 28 | 40 |
| 31 | 21 or 23 or 25 or 27 or 29 or 30 | 2,530 |
| 32 | limit 31 to English language | 2,420 |
| 33 | exp Observation/ or exp Epidemiologic Studies/ or exp Case-Control Studies/ or exp Cohort Studies/ or exp Controlled Before-After Studies/ or exp Cross-Sectional Studies/ or exp Clinical Trials/ | 5,844,549 |
| 34 | ((observation* or epidemiolog* or case-control or cohort or before-after or cross-sectional or "before and after" or crosssectional) adj (study or studies)).mp. | 1,839,278 |
| 35 | Evidence Based Practice/ | 87,572 |
| 36 | guideline*.mp. | 1,014,801 |
| 37 | (program* adj3 (develop* or implement*)).mp. | 141,132 |
| 38 | 33 or 34 or 35 or 36 or 37 | 7,058,084 |
| 39 | 32 and 38 | 1,103 |
| 40 | limit 39 to yr="2014 -Current" | 704 |

Table A9. PsycInfo Search History for Questions 3 and 4

| # | Search Statement | Results |
|----|---|-----------|
| 1 | Gender Equality/ or Sexism/ | 5,554 |
| 2 | (gendered approach* or gender-specific or gender sensitive or gender perspective*).mp. | 8,068 |
| 3 | ((gender or sex or gender-based or sex-based) adj (equality or equity or inequit* or inequalit* or bias* or disparit* or discrimination or prejudice)).mp. | 15,923 |
| 4 | 1 or 2 or 3 | 26,049 |
| 5 | Treatment/ or Drug Therapy/ or Caregiving/ | 236,134 |
| 6 | Patient Care Management/ or Comprehensive Dental Care/ or Patient Care Planning/ or Primary Health Care/ or "Continuum Of Care"/ or Patient-Centered Care/ or Patient Centered Care/ or Caring Behaviors/ or Health Care Delivery/ or "Quality Of Care"/ or "Quality Of Services"/ or Health Care Access/ or Right To Treatment/ or Client Rights/ or Health Disparities/ or Disease Management/ or Pain Management/ or Patient Selection/ or Treatment Outcomes/ or Treatment Outcome Evaluation/ or Program Evaluation/ or Patient Reported Outcome Measures/ or Quality Control/ | 161,473 |
| 7 | Treatment Planning/ or Health Services Needs/ | 7,424 |
| 8 | Pharmacy/ or Preventive Health Services/ or Diagnostic Criteria/ | 8,367 |
| 9 | 5 or 6 or 7 or 8 | 386,316 |
| 10 | 4 and 9 | 1,186 |
| 11 | Women/ | 98,149 |
| 12 | (wom#n or girl? or mother? or wife or wives or female?).mp. | 1,434,026 |
| 13 | 11 or 12 | 1,434,026 |
| 14 | 10 and 13 | 983 |
| 15 | Health Education/ or Health Literacy/ or Health Promotion/ | 45,501 |
| 16 | Health Knowledge, Attitudes, Practice/ | 0 |
| 17 | (health adj (promotion or literacy or education or knowledge or counsel* or teach* or mentor*)).mp. | 104,022 |
| 18 | 15 or 16 or 17 | 104,022 |

| # | Search Statement | Results |
|----|--|---------|
| 19 | 14 and 18 | 52 |
| 20 | ((wom#n or girl? or mother? or wife or wives or female?) adj7 (health adj (promotion or literacy or education or knowledge))).mp. | 20,021 |
| 21 | 4 and 20 | 165 |
| 22 | ((wom#n or girl? or mother? or wife or wives or female?) adj4 (treatment* or therapeutic* or therapies or health service* or healthcare or health care or surgical procedure* or diagnostic test* or clinical pathology or pharmacy or pharmaceutical preparation* or medical equipment or medical device* or clinical practice))).mp. | 21,045 |
| 23 | 4 and 22 | 747 |
| 24 | ((wom#n or girl? or mother? or wife or wives or female?) adj5 ((health or healthcare or health care) adj5 (educat* or counsel* or teach* or mentor*))).mp. | 5,133 |
| 25 | 4 and 24 | 55 |
| 26 | Sex Factors/ | 0 |
| 27 | 4 and 9 and 13 and 26 | 0 |
| 28 | 4 and 14 and 19 and 27 | 0 |
| 29 | 19 or 21 or 23 or 25 or 27 or 28 | 962 |
| 30 | exp Observation Methods/ or exp Epidemiologic Studies/ or exp Case-Control Studies/ or exp Cohort Studies/ or exp Controlled Before-After Studies/ or exp Cross-Sectional Studies/ or exp Clinical Trials/ | 20,751 |
| 31 | ((observation* or epidemiolog* or case-control or cohort or before-after or cross-sectional or "before and after" or crosssectional) adj (study or studies)).mp. | 219,412 |
| 32 | Evidence Based Practice/ | 21,241 |
| 33 | guideline*.mp. | 86,114 |
| 34 | (program* adj3 (develop* or implement*)).mp. | 59,725 |
| 35 | 30 or 31 or 32 or 33 or 34 | 391,315 |
| 36 | 29 and 35 | 137 |
| 37 | limit 36 to (English language and yr="2014 -Current") | 45 |

Table A10. Emcare Search History for Questions 3 and 4

| # | Search Statement | Results |
|---|--|-----------|
| 1 | Gender Equity/ or Sexism/ | 2,897 |
| 2 | (gendered approach* or gender-specific or gender sensitive or gender perspective*).mp. | 8,877 |
| 3 | ((gender or sex or gender-based or sex-based) adj (equality or equity or inequit* or inequalit* or bias* or disparit* or discrimination or prejudice)).mp. | 10,623 |
| 4 | 1 or 2 or 3 | 20,735 |
| 5 | Therapeutics/ or Drug Therapy/ or Patient Care/ | 315,292 |
| 6 | exp Health Services/ | 1,741,646 |

| # | Search Statement | Results |
|----|--|-----------|
| 7 | Patient Care Management/ or Dental Procedure/ or Patient Care Planning/ or Primary Health Care/ or "Continuity Of Patient Care"/ or Patient-Centered Care/ or "Delivery Of Health Care"/ or "Delivery Of Health Care, Integrated"/ or Health Care Access/ or Primary Care Access/ or Health Equity/ or Right To Health/ or Universal Health Care/ or Healthcare Disparities/ or Disease Management/ or Analgesia/ or "Drug Utilization Review"/ or Patient Care Team/ or Patient Selection/ or Health Care Quality/ or Outcome Assessment, Health Care/ or Patient Outcome Assessment/ or Patient Reported Outcome Measures/ or Quality Control/ | 538,800 |
| 8 | Health Planning/ or Health Care Rationing/ or "Health Services Needs And Demand"/ or National Health Programs/ or State Medicine/ | 235,517 |
| 9 | Pharmaceutical Services/ or Preventive Health Services/ or Diagnostic Services/ | 10,671 |
| 10 | "Diagnostic Techniques And Procedures"/ | 22,754 |
| 11 | 5 or 6 or 7 or 8 or 9 or 10 | 2,114,115 |
| 12 | 4 and 11 | 5,053 |
| 13 | Women/ | 1,916,479 |
| 14 | (wom#n or girl? or mother? or wife or wives or female?).mp. | 2,300,457 |
| 15 | 13 or 14 | 2,300,457 |
| 16 | 12 and 15 | 4,405 |
| 17 | Health Education/ or Health Literacy/ or Health Fairs/ or Health Promotion/ | 82,337 |
| 18 | Health Knowledge, Attitudes, Practice/ | 9,363 |
| 19 | (health adj (promotion or literacy or education or knowledge or counsel* or teach* or mentor*)).mp. | 109,317 |
| 20 | 17 or 18 or 19 | 116,676 |
| 21 | 16 and 20 | 292 |
| 22 | ((wom#n or girl? or mother? or wife or wives or female?) adj7 (health adj (promotion or literacy or education or knowledge))).mp. | 11,284 |
| 23 | 4 and 22 | 110 |
| 24 | ((wom#n or girl? or mother? or wife or wives or female?) adj4 (treatment* or therapeutic* or therapies or health service* or healthcare or health care or surgical procedure* or diagnostic test* or clinical pathology or pharmacy or pharmaceutical preparation* or medical equipment or medical device* or clinical practice)).mp. | 29,567 |
| 25 | 4 and 24 | 712 |
| 26 | ((wom#n or girl? or mother? or wife or wives or female?) adj5 ((health or healthcare or health care) adj5 (educat* or counsel* or teach* or mentor*))).mp. | 12,312 |
| 27 | 4 and 26 | 99 |
| 28 | Sex Factors/ | 223 |
| 29 | 4 and 11 and 15 and 28 | 2 |
| 30 | 4 and 15 and 20 and 28 | 0 |
| 31 | 21 or 23 or 25 or 27 or 29 or 30 | 1,103 |
| 32 | limit 31 to English language | 1,055 |
| 33 | exp Observation/ or exp Epidemiologic Studies/ or exp Case-Control Studies/ or exp Cohort Studies/ or exp Controlled Before-After Studies/ or exp Cross-Sectional Studies/ or exp Clinical Trials/ | 990,482 |
| 34 | ((observation* or epidemiolog* or case-control or cohort or before-after or cross-sectional or "before and after" or crosssectional) adj (study or studies)).mp. | 513,772 |

| # | Search Statement | Results |
|----|--|-----------|
| 35 | Evidence Based Practice/ | 37,859 |
| 36 | guideline*.mp. | 290,187 |
| 37 | (program* adj3 (develop* or implement*)).mp. | 51,207 |
| 38 | 33 or 34 or 35 or 36 or 37 | 1,522,913 |
| 39 | 32 and 38 | 370 |
| 40 | limit 39 to yr="2014 -Current" | 184 |

Table A11. Cochrane Central Register of Controlled Trials search history for questions 3 and 4

| # | Search Statement | Results |
|----|--|---------|
| 1 | Gender Equity/ or Sexism/ | 71 |
| 2 | (gendered approach* or gender-specific or gender sensitive or gender perspective*).mp. | 841 |
| 3 | ((gender or sex or gender-based or sex-based) adj (equality or equity or inequit* or inequalit* or bias* or disparit* or discrimination or prejudice)).mp. | 488 |
| 4 | 1 or 2 or 3 | 1,340 |
| 5 | Therapeutics/ or Drug Therapy/ or Patient Care/ | 15,649 |
| 6 | exp Health Services/ | 134,068 |
| 7 | Patient Care Management/ or Comprehensive Dental Care/ or Patient Care Planning/ or Primary Health Care/ or "Continuity Of Patient Care"/ or Patient-Centered Care/ or Progressive Patient Care/ or "Delivery Of Health Care"/ or "Delivery Of Health Care, Integrated"/ or Health Services Accessibility/ or Access To Primary Care/ or Health Equity/ or Right To Health/ or Universal Health Care/ or Healthcare Disparities/ or Disease Management/ or Pain Management/ or "Medication Review"/ or Patient Care Team/ or Patient Selection/ or "Quality Of Health Care"/ or Outcome Assessment, Health Care/ or Patient Outcome Assessment/ or Patient Reported Outcome Measures/ or Quality Assurance, Health Care/ or Quality Indicators, Health Care/ | 35,077 |
| 8 | Health Planning/ or Health Care Rationing/ or "Health Services Needs And Demand"/ or National Health Programs/ or State Medicine/ | 1,477 |
| 9 | Pharmaceutical Services/ or Preventive Health Services/ or Diagnostic Services/ | 834 |
| 10 | "Diagnostic Techniques And Procedures"/ or Diagnostic Imaging/ | 334 |
| 11 | 5 or 6 or 7 or 8 or 9 or 10 | 169,153 |
| 12 | 4 and 11 | 211 |
| 13 | Women/ | 290 |
| 14 | (wom#n or girl? or mother? or wife or wives or female?).mp. | 990,752 |
| 15 | 13 or 14 | 990,752 |
| 16 | 12 and 15 | 207 |
| 17 | Health Education/ or Health Literacy/ or Health Fairs/ or Health Promotion/ | 12,266 |
| 18 | Health Knowledge, Attitudes, Practice/ | 7,385 |
| 19 | (health adj (promotion or literacy or education or knowledge or counsel* or teach* or mentor*)).mp. | 32,318 |
| 20 | 17 or 18 or 19 | 32,320 |
| 21 | 16 and 20 | 59 |
| 22 | ((wom#n or girl? or mother? or wife or wives or female?) adj7 (health adj (promotion or literacy or education or knowledge))).mp. | 6,523 |

| # | Search Statement | Results |
|----|---|---------|
| 23 | 4 and 22 | 23 |
| 24 | ((wom#n or girl? or mother? or wife or wives or female?) adj4 (treatment* or therapeutic* or therapies or health service* or healthcare or health care or surgical procedure* or diagnostic test* or clinical pathology or pharmacy or pharmaceutical preparation* or medical equipment or medical device* or clinical practice)).mp. | 177,006 |
| 25 | 4 and 24 | 218 |
| 26 | ((wom#n or girl? or mother? or wife or wives or female?) adj5 ((health or healthcare or health care) adj5 (educat* or counsel* or teach* or mentor*))).mp. | 6,526 |
| 27 | 4 and 26 | 28 |
| 28 | Sex Factors/ | 7,053 |
| 29 | 4 and 11 and 15 and 28 | 61 |
| 30 | 4 and 15 and 20 and 28 | 20 |
| 31 | 21 or 23 or 25 or 27 or 29 or 30 | 317 |
| 32 | limit 31 to English language | 307 |
| 33 | exp Observation/ or exp Epidemiologic Studies/ or exp Case-Control Studies/ or exp Cohort Studies/ or exp Controlled Before-After Studies/ or exp Cross-Sectional Studies/ or exp Clinical Trials/ | 195,918 |
| 34 | ((observation* or epidemiolog* or case-control or cohort or before-after or cross-sectional or "before and after" or crosssectional) adj (study or studies)).mp. | 62,547 |
| 35 | Evidence Based Practice/ | 771 |
| 36 | guideline*.mp. | 54,758 |
| 37 | (program* adj3 (develop* or implement*)).mp. | 10,247 |
| 38 | 33 or 34 or 35 or 36 or 37 | 285,865 |
| 39 | 32 and 38 | 94 |
| 40 | limit 39 to yr="2014 -Current" | 45 |

Table A12.

Concept Grid for Research Question 5: What are the gaps in data collection? e.g. instances where standard reporting does not include disaggregation by sex and/or gender and identify

| CONCEPT GRID | MeSH terms | Textwords |
|--|--|--|
| Problem Gender bias | Gender Equity/ Sexism/ | (gendered approach* or gender-specific or gender sensitive or gender perspective*).mp. ((gender or sex or gender-based or sex-based) adj (equality or equity or inequit* or inequalit* or bias* or disparit* or discrimination or prejudice)).mp. |
| Interest Female patients | Women/ | (wom#n or girl? or mother? or wife or wives or female?).mp. |
| Context Healthcare providers | exp Data collection/ exp Data accuracy/ | ((gender-based or gender specific) adj1 (data collection* or data analysis or data management or data accurac* or data gap or data discrepant*)).mp. |

Table A13. MEDLINE search history for question 5

| # | Search Statement | Results |
|----|--|----------|
| 1 | Gender Equity/ or Sexism/ | 4003 |
| 2 | (gendered approach* or gender-specific or gender sensitive or gender perspective*).mp. | 16392 |
| 3 | ((gender or sex or gender-based or sex-based) adj (equality or equity or inequit* or inequalit* or bias* or disparit* or discrimination or prejudice)).mp. | 18042 |
| 4 | 1 or 2 or 3 | 35494 |
| 5 | Therapeutics/ or Drug Therapy/ or Patient Care/ | 51908 |
| 6 | exp "Delivery of Health Care"/ or exp Health Services/ or exp Health Services Accessibility/ | 3188729 |
| 7 | Health Planning/ or Health Care Rationing/ or "Health Services Needs And Demand"/ or National Health Programs/ or State Medicine/ | 175851 |
| 8 | Pharmaceutical Services/ or Preventive Health Services/ or Diagnostic Services/ | 26274 |
| 9 | 5 or 6 or 7 or 8 | 3267915 |
| 10 | Women/ | 15200 |
| 11 | (wom#n or girl? or mother? or wife or wives or female?).mp. | 10214608 |
| 12 | 10 or 11 | 10214608 |
| 13 | exp Data Collection/ or exp Data Analysis/ or exp Data Management/ or exp Data Accuracy/ | 2569090 |
| 14 | exp Information Dissemination/ or exp Information Management/ or exp Health Information Systems/ | 258050 |
| 15 | (data adj2 (gap? or discrepant*)).mp. | 4431 |
| 16 | (data adj3 disaggregat*).mp. | 1125 |

| # | Search Statement | Results |
|----|---|---------|
| 17 | (data collection* or data analysis or data management or data accurac*).mp. | 303520 |
| 18 | 13 or 14 or 15 or 16 or 17 | 2778656 |
| 19 | 4 and 9 and 12 and 18 | 2373 |
| 20 | ((wom#n or girl? or mother? or wife or wives or female?) adj7 (treatment* or therapeutic* or therapies or health service* or healthcare or health care or surgical procedure* or diagnostic test* or clinical pathology or pharmacy or pharmaceutical preparation* or medical equipment or medical device* or clinical practice)).mp. | 266428 |
| 21 | 19 and 20 | 515 |
| 22 | ((gender* or sex) adj3 disaggregated data*).mp. | 129 |
| 23 | ((gender-based or gender specific or gender sensitive or sex based) and (data adj3 (gap? or discrepant*))).mp. | 18 |
| 24 | ((gender-based or gender specific or gender sensitive or sex based) and (data adj3 disaggregat*)).mp. | 65 |
| 25 | ((gender-based or gender specific or gender sensitive or sex based) adj5 (data collection* or data analysis or data management or data accurac*)).mp. | 20 |
| 26 | ((gender* or sex) adj5 (data adj3 disaggregat*)).mp. | 244 |
| 27 | 21 or 22 or 23 or 24 or 25 or 26 | 801 |
| 28 | limit 27 to yr="2014 -Current" | 496 |

Supplementary search

To identify systematic reviews and primary studies evaluating interventions to reduce gender bias, which may not have been captured in the searches above.

Table A14. Supplementary Search: MEDLINE Search History

| # | Search Statement | Results | Annotation |
|---|---|---------|---|
| 1 | (exp Health Services Accessibility/ or exp Delivery of Health Care/ or Quality Assurance, Health Care/ or Quality of Health Care/ or Healthcare Disparities/ or exp Health Policy/ or exp Primary Health Care/) and (Sexism/ or Sex Factors/ or Gender Equity/) and (Systematic Review/ or (systematic or scoping or synthesis or meta-analysis).ti.) | 289 | SRs [MeSH terms] |
| 2 | ((gender bias or gender disparities) and (systematic or scoping or synthesis or meta-analysis)).ti. or ((gender bias or gender disparities) adj10 (systematic or scoping or synthesis or meta-analysis)).ab. | 58 | SRs [free text terms] |
| 3 | ((bias or disparities or inequalit* or inequit*) adj20 (intervention or reduc*) adj20 (healthcare or health care) adj20 gender).ti,ab. or ((Sex Factors/ or Sexism/ or gender.ti. or (gender bias or sex disparit* or sex based or gender based).ti,ab.) adj20 | 1741 | Modified search of Alcalde-Rubio 2020 scoping review (translated from PubMed) |

| # | Search Statement | Results | Annotation |
|----|--|---------|--|
| | (intervention or reduc*).ti,ab. adj20 (healthcare or health care or health services).ti,ab.) | | |
| 4 | 1 or 2 or 3 | 2064 | |
| 5 | limit 4 to dt=20181201-20231115 | 456 | SR search and update of Alcalde-Rubio 2020 limited to Dec 2018 onwards |
| 6 | limit 4 to yr="2019 -Current" | 471 | |
| 7 | 6 or 7 | 479 | |
| 8 | ((gender* or sex) adj2 (bias* or prejudice* or equalit* or inequalit* or equit* or inequit* or disparit* or norms or gap or gaps or difference* or discriminat*) adj10 (reduc* or minimi?e* or overcom* or advance or barriers or promot* or address* or prevent* or improv* or counter*)).ti. | 777 | Reducing gender bias (not limited to study design terms) |
| 9 | ((gender* or sex) adj (bias* or disparit*) adj5 (reduc* or minimi?e* or overcom* or advance or barriers or promot* or address* or prevent* or improv* or counter*)).ab. | 558 | |
| 10 | (gender* adj (integrated or accommodating or transformative) adj5 (strategy or strategies or intervention* or program* or initiative* or policy or policies or law or laws or evaluat* or tool* or measure* or checklist*)).ti,ab. | 173 | Gender-integrated interventions |
| 11 | 8 or 9 or 10 | 2064 | |
| 12 | limit 11 to yr="2014 -Current" | 1147 | |
| 13 | 7 or 12 | 1602 | |
| 14 | (Animals/ not (Humans/ and Animals/)) or (comment or editorial or letter).pt. or (rats or mice or rabbits).ti. | 7408007 | |
| 15 | 13 not 14 | 1433 | |

Table B1. Question 1: What are the barriers to gender equity in health care and services experienced by women and girls in Australia?

| Author, year, country | Aim, study design | Sample size, participants, setting | Definition or clarification of sex/gender | Outcome & measures | Results/main findings |
|--------------------------------|--|--|--|--|---|
| Brucki et al., 2023, Australia | To evaluate gender inequities associated with increased psychological distress in Victorian women aged 18+ living independently during stay-at-home directions for COVID-19. Literature review: qualitative & quantitative peer-reviewed, grey literature. | 5,926,624 people, 50.9% (n = 3,018,549) women. Victoria in lockdown 6 times for 264 days. | Use existing data where participants treated as binary sex. Sex usually called “gender”, but towards end of paper, call gender “a social construct”. | Occupation, psychological distress, loneliness, & other health impacts. Equity-Focused Health Impact Assessment (EFHIA) | <ul style="list-style-type: none"> • Lockdown policies generated & perpetuated avoidable inequities, harming mental health: increased psychological distress, particularly for women. Anxiety Symptoms: <ul style="list-style-type: none"> • Restless or fidgety: women 43.5%, men 38.4%. • Nervous: women 50.0%, men 41.0%. • Everything is an effort: women 44.7%, men 36.2%. Depression symptom: <ul style="list-style-type: none"> • Loneliness: women 28.0%, men 16.0%. |
| Fogg et al., 2019, Australia | To quantify sex differences in diagnostic and revascularisation coronary procedures within 1 year of hospitalisation for acute myocardial infarction (AMI) or angina. Prospective cohort study. | 9037 patients: 4580 admitted with AMI, 4457 with angina. Women & men aged 45+ from Sax Institute’s 45 & Up Study, all from New South Wales, initially randomly selected from Department of Human Services database. | No definition of sex/gender. Participants treated as binary sex. “Sex” used correctly; “gender” once for sex. | Coronary angiography & coronary revascularisation with percutaneous coronary intervention or coronary artery bypass graft (PCI/CABG) within 1 year of index admission to hospital. All 50 APDC procedure-code fields, coded using Australian Classification of Health Interventions, used with ICD-10-AM. | <ul style="list-style-type: none"> • Women less likely than men to receive coronary procedures, particularly revascularisation, especially if presenting with angina. • AMI: 64.7% of women, 71.6% of men received angiography; 37.4% women, 57.8% men received PCI/CABG. • Angina: 54.9% of women, 67.3% of men received angiography; 19.5% of women, 44.6% of men received PCI/CABG. • Health professionals’ unconscious “gender bias”? |

| Author, year, country | Aim, study design | Sample size, participants, setting | Definition or clarification of sex/gender | Outcome & measures | Results/main findings |
|-------------------------------------|---|---|--|--|---|
| Gauci, 2022, Australia | To explore contribution of sex & gender to cardiovascular disease (CVD) outcomes in women & men & offer recommendations for researchers & clinicians. Literature review (no methods or search strategy reported). | Sample size of individual studies not reported. Data mostly from hospital, emergency dept., clinic. Female & male patients with CVD, no age limitations. | Yes, both. | Contribution of sex & gender to CVD outcomes in men and women | <ul style="list-style-type: none"> Sex & gender differences in risk, presentation, treatment, research of CVD have disproportionate effects on women. In Australia, women are 18% less likely than men to receive urgent care allocation on admission to emergency department (ED) (OR 0.82 (95% CI 0.79 to 0.85), 16% less likely to be seen by emergency physician in 1st hour of arrival at ED (mean difference 0.15 (95% CI 0.13 to 0.1), 20% less likely to have diagnostic troponin test (OR 0.80 (95% CI 0.77 to 0.83), & 36% less likely to be admitted to special care unit (OR 0.64 (95% CI 0.61 to 0.68). Women more likely to die during hospital admission. |
| Hailemariam et al., 2021, Australia | To determine whether consumption of risky addictive goods (smoking, drinking, gambling) has implications for health outcomes & gender differences in general & mental health in Australia. Secondary econometric analysis of Household, Income & Labour Dynamics in Australia (HILDA) (longitudinal). | 15 waves of HILDA data (2005-2019). 13,969 individuals at baseline (2001); 59% wave 1 female respondents, 62% of wave 1 male respondents re-interviewed in wave 19. No sample sizes reported for each wave. | No definition of sex/gender. Participants treated as binary sex. "Gender" used for sex, but also include socio-cultural matters. | General & mental health. General health based on 5-item health survey. Mental health used transformed sub-scale of SF-36 based on the 5-Item Mental Health Inventory | <ul style="list-style-type: none"> Complex interaction among risky addictive behaviours, gender, & health. In Australia, women tend to have better general health ($p<0.001$) but worse mental health outcomes than men ($p<0.001$). Smoking & gambling widen gender gap in general health; alcohol consumption plays no role. Smoking & gambling reduce gender gap in mental health; alcohol consumption tends to increase gender gap in mental health. Social support, neighbourhood trust, dietary choice, & life satisfaction contribute to general & mental health outcomes. |

| Author, year, country | Aim, study design | Sample size, participants, setting | Definition or clarification of sex/gender | Outcome & measures | Results/main findings |
|------------------------------------|---|--|--|---|---|
| Hamilton et al., 2022, Australia | To compare women with men presenting with Human Immunodeficiency Virus (HIV) to a public health HIV clinic, to identify special characteristics & health care needs of women living with HIV. Retrospective cohort. | 35 women, 135 men with HIV who attended a clinic in Victoria's Barwon South West region 2009 - 2020. | No definitions. Participants treated as binary sex. "Gender" used for sex, although socio-cultural aspects discussed. | HIV history: how detected, CD4 cell count, HIV VL, year antiretroviral therapy (ART) commenced. Physical & mental health indicators: alcohol & drug use, mental health diagnoses, AIDS-defining illnesses, other illnesses. | <ul style="list-style-type: none"> • More women than men diagnosed by targeted screening initiated by health professional (F: 45.7% vs M: 3.0%). • More men diagnosed by routine sexual health-related screening (F:37% vs M: 17%). • 1e men more likely to receive good practice in HIV prevention, early diagnosis, early initiation of treatment & care. • Women younger when diagnosed than men (mean 29.5 years vs. 36.7 years) & more likely to be born in Africa (28.6% vs. 5.2%). |
| Hammarberg et al., 2020, Australia | To identify sex & age differences in clinically significant symptoms of depression & anxiety, & factors associated with these differences in adults (aged 18+) in Australia during COVID-19-related restrictions. Cross sectional study | 13,762 (female: 10,434, male: 3328) analysed. Anonymous online survey. | No definition of sex and/or gender. "Sex" used accurately throughout. Participants self-identified as female, male, other. ("Other" not included in analysis.) | PHQ (Clinically significant symptoms of depression, ≥ 10) or GAD 7 (anxiety, ≥ 10) (GAD-7), and GAD-7, item 6 (experiences of irritability). | <ul style="list-style-type: none"> • Women more likely than men to have clinically significant symptoms of <ul style="list-style-type: none"> - Depression (26.3% (95% CI 25.4 to 27.1) vs 20.1% (95% CI 18.7 to 21.5), $p < 0.001$) - Anxiety (21.8% (95% CI 21.0 to 22.6) vs 14.2% (95% CI 13.0 to 15.4) $p < 0.001$); - Irritability in previous fortnight (63.1% (95% CI 62.1 to 64.0) vs 51.4% (95% CI 49.7 to 53.2), $p < 0.001$). • Women more likely to do unpaid work caring for children (22.8% (95% CI 22.0 to 23.6) vs 8.6% (95% CI 7.7 to 9.6), $p < 0.001$) & dependent relatives (9.8% (95% CI 9.2 to 10.3) vs 5.7% (95% CI 4.9 to 6.5), $p < 0.001$): made significant contributions to mental health outcomes. |

| Author, year, country | Aim, study design | Sample size, participants, setting | Definition or clarification of sex/gender | Outcome & measures | Results/main findings |
|--------------------------------|---|---|---|---|---|
| Hashmi et al., 2023, Australia | To present a novel method to measure inequity in delivery of psychiatric care. Secondary analysis of Household, Income & Labour Dynamics in Australia (HILDA). | Wave 1: 13,969 individuals (female 59%). Data from waves 9 (year 2009, n = 11,563) & 17 (2017, n = 16,194). Aged 15+ years. | No definition of sex/gender. Participants treated as binary sex. "Gender" used for sex. | General health using SF 36. Mental health using K10, Inequality using Gini index | <ul style="list-style-type: none"> • Marked increase in unmet needs in psychiatric care utilisation since 2009 in Australia. • Women experience higher level of inequity in psychiatric care utilisation than men. • Inequity levels of psychiatric care utilisation in 2009 & 2017 for women: 0.078 & 0.109; men: 0.051 & 0.081. |
| Hyun et al., 2017, Australia | To determine any gap in cardiovascular disease (CVD) risk factor assessment & management between women & men in Australian primary health care. Secondary analysis: baseline data from Treatment of Cardiovascular Risk Using Electronic Decision Support (TORPEDO) | 53,085 (F 30,601, M 22,484) routinely-attending patients with CVD, from 60 Australian primary healthcare services in 2012. | No definition. Participants treated as binary sex. "Gender" & "sex" used interchangeably for sex. | Absolute CVD risk assessment, rate of optimal guideline-recommended preventive medication prescriptions based on Framingham risk score. | <ul style="list-style-type: none"> • Women tended to be less intensively treated. • Women less often measured for national guideline-recommended CVD risk factors (41% vs 46%, p<0.001). • After adjusting for demographic & clinical characteristics, women less likely to have CVD risk factors measured (OR:0.88, 95% CI, 0.81; 0.96). • Of 13294 (47% female) patients at high CVD risk, women prescribed guideline-recommended medications = to men (47% vs. 48%, p=0.20). • Adjusted odds of prescription were greater for women: 1.12 (1.01, 1.23). • High risk women aged 35-54 had 37% lower odds of being appropriately treated than men of same age: 0.63 (0.52, 0.77). |

| Author, year, country | Aim, study design | Sample size, participants, setting | Definition or clarification of sex/gender | Outcome & measures | Results/main findings |
|---|--|--|--|---|--|
| Jarallah & Baxter, 2019, Australia | To assess relationship between gender & psychological distress in humanitarian migrants in Australia, including potential moderating role of migration pathway. Secondary analysis, data from first wave of Building a New Life in Australia (BNLA). | 2,399 migrants (F: 1103, M: 1296) who arrived in Australia or were granted permanent protection visas May-Dec 2013 from 35 countries; most from Iraq, Afghanistan, Iran. About 50 languages. | No definition, but reference to socio-cultural matters associated with gender. "Gender" also used for sex, treated as binary. | Psychological distress (K-6). Migration pathway. | <ul style="list-style-type: none"> • Refugee/asylum seeker women are more likely than men to have psychological distress ($p<0.01$). • Being an asylum seeker is associated with higher psychological distress than being a refugee. • Significant association between pre-migration trauma, settlement arrangements (finance, housing, getting used to life in Australia, loneliness) & psychological distress. |
| Kim et al., 2023, Australia & New Zealand | To define proportion of female to male donors for living donor kidney transplantation stratified by recipient gender; factors associated with female kidney donation. Secondary analysis of Australian & New Zealand Dialysis & Transplantation (ANZDATA) & Australian & New Zealand Organ Donor (ANZOD) registries. | 3523 donor-recipient pairs. 2012 (57%) donors female, 2203 (63%) recipients male. | Clear definitions of sex (biological) & gender (social construction). BUT: "Gender" used for sex in data collection form after 2016. | Probability of receiving kidney from woman (not man). | <ul style="list-style-type: none"> • In Australia, male recipients more likely to receive kidneys from female than male donors. • Of 3523 Australian living donor pairs, 2203 (63%) recipients male, 2012 (57%) donors female. • Female donation associated with recipient sex; spousal donors (wife to husband) contributed to gendered donor-recipient relationship. • Older recipients in regional or remote areas were more likely to receive kidneys from female donors than those from major cities (>60 years: 0.67 [0.63; 0.71] vs. <60 years: 0.57 [0.53; 0.60]). |

| Author, year, country | Aim, study design | Sample size, participants, setting | Definition or clarification of sex/gender | Outcome & measures | Results/main findings |
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| Ladhani et al. 2020 Australia | To determine association between obesity & access to deceased donor transplantation, & any association with being female/male. Secondary analysis of Australian & New Zealand Dialysis & Transplantation (ANZDATA) Registry, National Organ Matching System). | 11,633 Australian patients aged 18+. (Women: 4,636, Men: 6,997. Commenced renal replacement therapy, with peritoneal dialysis or haemodialysis, 1 January 2007 - 31 December 2014 | No definition of sex/gender. Terms used interchangeably for sex. Participants treated as binary sex. | Association between obesity & access to deceased donor transplantation: difference between women & men. Likelihood of first activation on deceased donor transplant waiting list & receiving a first deceased donor organ after listing. BMI | <ul style="list-style-type: none"> • Obesity reduces likelihood of being listed for deceased donor transplantation, especially for women, but not transplantation once listed. • Women who were obese were 34% less likely to be listed than non-obese women [aHR 0.66 (95% CI 0.58–0.76)]; obese men 14% less likely than non-obese men [aHR 0.86 (95% CI 0.77–0.97)]. • Authors suggest differences between women & men could arise from systemic barriers of gender & power, e.g., women's status as primary caregivers, & less power in male-dominated medical decision making. Possible immunological considerations. |
| Lee et al., 2019, Australia | To determine sex differences in management of patients with history of coronary heart disease (CHD) in primary care. Secondary analysis of large Australian general practice dataset, MedicineInsight. | 130,926 patients (47% female), aged ≥18 years at baseline, history of CHD. GP practice. | No definition of sex/gender. Participants treated as binary sex. "Sex" used consistently & correctly. | Management (medication, treatment, risk factor monitoring) of patients with history of CHD). | <ul style="list-style-type: none"> • Women with CVD are less well assessed & prescribed than men. • Recommended prescribing of ≥3 medications: women 44%, men 61%; p<0.001). • Younger patients, especially women aged <45 years, substantially under-prescribed (aged <45 years prescribed ≥3 medications: women 2%, men 8%; p<0.001). • Women less likely to be assessed for cardiovascular risk factors (blood test for lipids: women 70%-76%, men 77%-81%; p<0.001). • Higher proportion of women achieved targets for risk factors (≥4 targets in patients assessed for all risk factors: women 82%, men 76%). |

| Author, year, country | Aim, study design | Sample size, participants, setting | Definition or clarification of sex/gender | Outcome & measures | Results/main findings |
|---------------------------------------|--|--|---|---|--|
| McBride et al., 2022, Australia | To examine evidence on the provision of cardiovascular risk assessment and management for Aboriginal and Torres Strait Islander women, and the existence of gender differentials in receipt of guideline-recommended care. Systematic review. | 16 included studies (via PubMed, Emcare, Embase, Scopus, PsychInfo, ProQuest, ATSIHealth via Informit Online, Web of Science, Australian Indigenous Health Bulletin). | No definition of sex/gender. Participants treated as binary sex. Used “gender” for sex. | Cardiovascular risk assessment and management. | <ul style="list-style-type: none"> • No major variations by sex. • Major gaps in guideline-recommended preventive cardiovascular care for Aboriginal and Torres Strait Islander women and men. |
| Mnatzagani an et al., 2016, Australia | To assess sex-specific age-adjusted risk of dying attributed to being admitted to coronary care unit (CCU), intensive care unit (ICU), or medical wards. Secondary analysis of hospital database. NB Study associated with Mnatzaganian et al. (2019). | 4,859 (1,566 women, 3293 men) presenting to 3 emergency departments (ED) with acute myocardial infarction (AMI) at acute care Victorian teaching hospitals, Dec 2008 – Feb 2014. | No definition of sex/gender. “Sex” usually used, & correctly, but also called gender. Participants treated as binary sex. | Sex differences in in-hospital mortality following first AMI. Time from onset of symptoms to arrival at ED by ambulance, triage urgency score, being seen by attending physician, electrocardiograms in ED, length of stay in ED, hospital ward destination, in-hospital mortality. | <ul style="list-style-type: none"> • Possible sex-related bias in management of patients diagnosed with AMI. • Women waited longer than men before seeking treatment, presented more often with atypical symptoms, less likely to be admitted to CCU or ICU. • Age-adjusted mortality in CCU/ICU or medical wards was higher in women (3.1 & 4.9 % in CCU/ICU and medical wards; men: 2.6 & 3.2 %). • Women admitted to medical wards were 89 % more likely than men to die. • 2.2 % of in-hospital mortality for men attributable to admission to medical wards rather than CCU/ICU; for women, this age-adjusted attributable risk was 4.1 %. |

| Author, year, country | Aim, study design | Sample size, participants, setting | Definition or clarification of sex/gender | Outcome & measures | Results/main findings |
|---------------------------------------|---|--|---|---|---|
| Mnatzagani an et al., 2019, Australia | To determine sex differences in triage, management, & outcomes associated with non-traumatic chest pain presentations in emergency department (ED). Secondary analysis of hospital database. NB Study associated with Mnatzaganian et al. (2016). | 54,138 patients (women 48.7%, men 51.3%) aged 18+ years with non-traumatic chest pain. Melbourne, Victoria ED. | No definition of sex/gender. "Sex" used correctly. Participants treated as binary sex. | Sex differences in triage, management, & outcomes. Symptoms, arrival mode, arrival time & day of week, nursing & medical management, diagnoses, admission status, hospital admitting ward on departure from ED. | <ul style="list-style-type: none"> • Women presenting to ED with chest pain treated less aggressively than men. • Women 18% less likely to be allocated immediate/within-10-min review (OR=0.82, 95% CI 0.79 to 0.85). • Women 16% less likely to be examined by ED physician in 1st hour at ED (0.84, 0.81 to 0.87). • Women 20% less likely to have troponin test (0.80, 0.77 to 0.83). • Women 36% less likely to be admitted to specialised care unit (0.64, 0.61 to 0.68). • Women 35% (p=0.039) & 36% (p=0.002) more likely to die in ED & in hospital, respectively. |
| Murphy et al., 2019, Australia | To compare door-to-balloon times & impact of timely reperfusion on clinical outcomes in women compared with men presenting with ST-elevation myocardial infarction (STEMI) undergoing primary percutaneous coronary intervention (PPCI). Secondary analysis of cohort study from Melbourne Interventional Group (MIG) registry. | 6,179 patients (1258 women) who underwent PCI for STEMI, Jan 2005 - Jun 2017, prospectively. | No definition of sex/gender. Both terms used to mean sex. Participants treated as binary sex. | Long-term mortality. Door-to-balloon times, impact of timely reperfusion. | <ul style="list-style-type: none"> • Women had longer ischemic times, higher risk profiles, different treatment than men: associated with worse outcome. • Women who were older (F: 69, M:62) with more co-morbidities had longer median symptom-to-balloon times (204 [interquartile range {IQR} 154 to 294] vs 181 [IQR 139 to 258] minutes; p < 0.001). • Women had longer median door-to-balloon times (81 [IQR 55 to 102] vs 75 [IQR 51 to 102]) minutes; p < 0.001), received fewer drug-eluting stents (39% vs 43%; p=0.01) & less radial access for PPCI (15% vs 21%; p < 0.001). • Women received less guideline-directed medical therapy; less aspirin prescription (93.4% vs 95.4%; p=0.02), statins (96.5% vs 97.6%; p < 0.05), & beta blockers (84.3% vs 89.4%; p < 0.001). • Unadjusted in-hospital & 30-day mortality rates were higher in women (8.8% vs 6.2%, 9.8% vs 6.9%; p < 0.001). |

| Author, year, country | Aim, study design | Sample size, participants, setting | Definition or clarification of sex/gender | Outcome & measures | Results/main findings |
|--------------------------------|--|---|---|---|---|
| Page et al., 2019, Australia | To estimate prevalence of polypharmacy in Australians aged 70+ years. (Polypharmacy has risk of harm, e.g., adverse drug reactions; associated with poor clinical outcomes.) Secondary analysis; data from the Pharmaceutical Benefits Scheme (PBS). | 2,593,514 people (1,407,313 women, 1,186,201 men) aged 70+ to whom PBS-listed medicines were dispensed 1 Jan 2006 - 31 Dec 2017. | No definition. "Sex" used correctly. Participants treated as binary sex. | Prevalence of continuous polypharmacy (5 or 5+ unique medicines dispensed). Changes in prevalence of continuous polypharmacy. | <ul style="list-style-type: none"> • In 2017, 36.1% of Australians aged 70+ (~935,240 people) were affected by continuous polypharmacy. • Rates of polypharmacy higher for women than men (5 & 5+: 36.6% v 35.4%, 10+: 6.0% vs 5.7%); highest those aged 80–84 (43.9%) & 85–89 (46.0%). • Despite awareness-raising & evidence that poor clinical outcomes are associated with polypharmacy in older people, prescribing behaviour appears unchanged during past decade. |
| Perera et al., 2021, Australia | To identify gender differences in healthy lifestyle adherence in patients treated with percutaneous coronary intervention (PCI) for coronary artery disease (CAD). Secondary analysis from Victorian Cardiac Outcomes Registry. | 729 consecutive patients treated with PCI (women n=192, 26.3%). 3 tertiary institutions (Monash Health, Alfred Health, Peninsula Health). | No definition of sex/gender. "Gender" used for sex. Participants treated as binary sex. | Gender (=sex) differences in adherence to heart-healthy diet, being physically active, not smoking, cardiac rehabilitation attendance, medication use at 12-months. Lipid levels. | <ul style="list-style-type: none"> • Women less likely to attend cardiac rehabilitation or achieve target lipid levels. • 56% adhered to all 3 lifestyle measures, no gender difference. • Women less likely than men to smoke (7.7% versus 12.2%, p,0.001), to be physically active (61.5% versus 78.2%; p,0.0001), attend cardiac rehabilitation (58.2% versus 66.4%; p,0.045), & take statin therapy (85.4% versus 94.7%; p,0.0001). • Being female independently predicted physical inactivity (OR 2.41, 95% CI 1.57–3.68, p,0.001). • Authors offer gendered explanations, e.g., being self-conscious about appearance, discomfort in groups, limited time. |

| Author, year, country | Aim, study design | Sample size, participants, setting | Definition or clarification of sex/gender | Outcome & measures | Results/main findings |
|-------------------------------|--|---|--|---|---|
| Riggs et al., 2014, Australia | To examine experiences of gender-diverse Australians. To identify relationships between demographic & health variables & healthcare experiences. Cross sectional online surveys. | Survey 1: 110 people male assigned at birth (MAAB) but not identifying as male. Survey 2: 78 people female assigned at birth (FAAB) but not identifying as female. | Gender, sex, & gender diversity clearly defined & used consistently. | First-person accounts from gender-diverse people. Relationships between demographic & health variables & healthcare experiences. | <ul style="list-style-type: none"> • Clear need for increased education of medical practitioners about gender-diverse clients. • 70% had consulted a psychiatrist. • MAAB participants rated experiences with psychiatrists more highly than FAAB. • 80% of participants had consulted a GP. • Comfort with & respect from GP were positively correlated with good mental health; discrimination was negatively correlated. • 42.5% of participants had sex-affirming surgery; they reported better physical & mental health than those who had not had surgery. • MAAB participants reported more positive experiences of surgery than FAAB. |
| Wang et al., 2022, Australia | To examine whether pre-hospital emergency medical service care differs for women and men subsequently admitted to hospital with stroke. Population-based cohort study. | 101,357 people (46,907 women, 53,967 men) with stroke conveyed by ambulance to New South Wales hospitals. | No definition. "Sex" used correctly. Participants treated as binary sex. | Emergency medical service assessments, protocols, and management for patients subsequently diagnosed with stroke, by sex. | <ul style="list-style-type: none"> • Women less likely than men to be managed according to the NSW Ambulance pre-hospital stroke care protocol (AOR: 0.95, 95% CI: 0.92-0.97). Likelihood of basic pre-hospital care: similar for both sexes (AOR, 1.01, 95% CI: 0.99-1.04). • Women more likely than men to be taken by ambulance (52.4% v 47.9%; OR: 1.09; 95% CI: 1.07-1.11). • Time between the emergency call and emergency admission: similar for both sexes. • Women and men similar in being assessed as having a stroke (AOR: 0.97, 95% CI: 0.93-1.01) or subarachnoid haemorrhage (AOR: 1.22, 95% CI: 0.73-2.03). • Women aged under 70 less likely than men to be assessed as having a stroke (AOR, 0.89, 95% CI: 0.82-0.97). |

| Author, year, country | Aim, study design | Sample size, participants, setting | Definition or clarification of sex/gender | Outcome & measures | Results/main findings |
|--|--|--|---|---|--|
| Worrall-Carter et al., 2016, Australia | To describe gender differences in epidemiology, treatment, & outcomes of all admissions for acute coronary syndrome (ACS) in Victoria. Retrospective cohort study. | 28,985 ACS patients (10,455 - 36% - women). Clinical services (Victorian hospitals). | No definition of sex/gender. "Gender" typically used to mean sex. Participants treated as binary sex. | In-hospital death & unplanned second ACS admission. | <ul style="list-style-type: none"> • Underestimation of coronary heart disease (CHD) risk in women may contribute to more conservative treatment, poorer outcomes. • Women were older than men (aged ≥ 75 years: 54% vs 31%; $p < .001$) & more likely to present with >1 comorbidities (53% vs 46%; $p < .001$). • Women more likely to be diagnosed with non-ST-segment elevation ACS (86% vs 80%; $p < .001$). • Women less likely than men to receive coronary interventions (angiogram: adjusted odds ratio [aOR], 0.71; 95% CI, 0.66-0.75; PCI: aOR, 0.73; 95% CI, 0.66-0.80; CABG: aOR, 0.58; 95% CI, 0.53-0.64). • Adverse outcomes (in-hospital death) were similar in women and men after accounting for confounding variables. |

Table B2. Question 2: Are there clinical guidelines, medical treatments, medical devices and diagnostic tools that do not take into account sex and gender differences?

| Author, year, country | Aim, study design | Sample size, participants, setting | Definition or clarification of sex/gender | Intervention type | Outcome & measures | Results/main findings |
|--------------------------------|--|---|--|--------------------|---|--|
| Looi et al., 2018, New Zealand | To investigate gender (=sex) differences in use of primary prevention implantable cardioverter defibrillators (ICD) in patients with heart failure. Observational Study. | 385 (58 women, 15.1%) patients with heart failure (HF) who received ICDs or cardiac resynchronisation therapy (CRT-D) at hospitals in northern New Zealand 1 Jan 2007 – 1 Jun 2015. | No definition of sex/gender. “Gender” consistently used for sex. Participants treated as binary sex. | ICD/CRT-D therapy. | Complication rates, device therapy treatment rates, mortality rates by sex. | <ul style="list-style-type: none"> • Perioperative complications were significantly more common in women referred for ICD/ CRT-D. • Still sex differences in NZ despite significant increase in ICD implantation rates. • Women more likely than men to have non-ischaemic cardiomyopathy & higher perioperative complications (8.6% vs 2.5%, P=0.02), with non-significant trend towards increased lead displacement (5.2% vs 1.8%, P=0.12). |

Table B3. Question 3: What existing measures/health promotion tools/interventions/programs are there in Australia and overseas that apply a gendered approach?

| Author, year, country | Aim, study design | Sample size, participants, setting | Definition or clarification of sex/gender | Intervention type | Outcome & measures | Results/main findings |
|--|--|--|--|--|---|---|
| Barha et al., 2017, Canada | To determine whether the effect of aerobic training (AT) on executive functions is dependent on biological sex; to examine possible underlying mechanisms. Secondary analysis (proof-of-concept single-blind RCT). | 29 women (control: 12, intervention: 17) & 29 men (control: 15, intervention: 14) aged 55+ years, clinically diagnosed with mild subcortical ischemic vascular cognitive impairment (SIVCI) in University of British Columbia Hospital Clinic. | No definition of sex/gender. Use of “biological sex” (implied definition). No mention of gender. Participants treated as binary sex. | Intervention: 60 min AT (10-min warmup, 40-min walking, 10-min cool down) 3 times weekly x 6 months, led by certified fitness instructors. Control: Monthly education classes from registered dietician about VCI & healthy diets. | 1) Number of comorbid conditions. 2) General mobility. 3) Mobility. 4) Depression, memory, response inhibition, Psychological tests. All by sex. | <ul style="list-style-type: none"> • Evidence of sex differences in effects of AT. • AT significantly increased brain-derived neurotrophic factor (BDNF) levels in women but decreased levels in men. • AT led to significant gains in functional fitness capacity in men only. |
| Cropsey et al., 2014, United States of America | To investigate racial & gender differences in smoking cessation, motivation to quit, & abstinence self-efficacy. Cross sectional study. | 673 smokers (443 African American, 65.8%; 222 women, 33.0%) aged 19+ years, under criminal justice supervision in communities, smoking 5+ cigarettes daily. Community smoking program. | No definition of sex/gender. “Gender” used for sex; some reference to socio-cultural factors. Participants treated as binary sex. | Pharmacotherapy, 4 sessions of behavioural counselling. | Smoking cessation (expectancies for different tobacco interventions, motivation to quit, abstinence self-efficacy). | <ul style="list-style-type: none"> • Mediating role of expectancies for treatment effectiveness for women (& African Americans). • Women perceived behavioural interventions, medication & nicotine replacement therapy as more effective than men. • Women’s expectations were associated with greater motivation to quit & abstinence self-efficacy. |

| Author, year, country | Aim, study design | Sample size, participants, setting | Definition or clarification of sex/gender | Intervention type | Outcome & measures | Results/main findings |
|---|--|--|--|--|--|---|
| Guerrero et al., 2014, United States of America | To examine gender (=sex & gender) differences in Black, Latino, & White subgroups in use of comprehensive substance use services & post-treatment substance use. Prospective longitudinal study. | 3,142 clients from 59 service delivery units. 1,812 Blacks (734 women), 486 Latinos (147 women), & 844 Whites (242 women) aged 17–51 years. 59 organisations for substance abuse treatment in communities. | No definition of sex/gender. “Gender” used for sex & socio-cultural matters. | Methadone treatment, counselling, short-term residential programs. | Dependent variable: 12 months post-treatment substance use. Explanatory variables: Access services, substance abuse counselling services, need–service ratio, client–provider relationship, treatment duration. | <ul style="list-style-type: none"> • All groups benefited from treatment; gender plays important role. • Women received more services related to their social roles, e.g., transportation, child care. • Women received more substance abuse counselling, more likely to receive services matched to needs. • Latin women had less post-treatment drug use than Latin men ($p=0.024$); no sex differences in other groups. • Recommend tailoring services to gender as well as ethnicity. |
| Harreiter & Kautzky-Willer, 2018, international | To address and summarise important issues of sex & gender in prevention of Type 2 diabetes mellitus (T2DM). Narrative (not systematic) literature review. | Unspecified medical databases searched. Articles published in English in previous 15 years. Number of papers not reported; 13 RCTs included. | Sex & gender defined. Both biology & social role considered. | Life style changes, weight management programs, exercise & sports programs, bariatric surgery. | Risk and prevention of T2DM. | <ul style="list-style-type: none"> • Few papers report role of sex or gender. • Sex & gender important in managing T2DM. • Pharmacological approaches are more successful in reducing and maintaining weight in women. • Strong diabetes risk reduction through bariatric surgery in women. • Gastric banding may be less efficient in men than women. |

| Author, year, country | Aim, study design | Sample size, participants, setting | Definition or clarification of sex/gender | Intervention type | Outcome & measures | Results/main findings |
|--|--|---|--|--|---|--|
| Huded et al., 2018, United States of America | To assess care & outcomes of men vs women with ST-segment elevation myocardial infarction (STEMI) before & after implementation of comprehensive STEMI protocol. Prospective observational registry-based study. | Intervention: 171 women, 378 men. Control: 233 women, 490 men. Patients with STEMI. Hospital setting. | No definition of sex/gender. "Sex" used appropriately. Participants treated as binary sex. | STEMI protocol. Control: Usual care, no protocol. | Women vs men. Care before and after implementation of a comprehensive STEMI protocol. Clinical outcomes: In-hospital adverse events, 30-day mortality stratified by sex before (Jan 1 2011 - Jul 14 2014) & after (Jul 15 2014 - Dec 31 2016) implementation of protocol. | <ul style="list-style-type: none"> • Systems-based approach to STEMI care reduces sex disparities, improves STEMI care & outcomes in women. • Protocol ensured any unconscious sex disparities in treatment were overcome. |
| Isgro et al., 2020, Italy | To measure gender (=sex) differences for chronic obstructive pulmonary disease (COPD) in patients' quality of care (QoC) before & after 2 educational interventions for GPs. Prospective cohort study. | Data from 30 GPs' electronic medical records (EMRs) of 1463 COPD patients in primary care, Sicily. | No definition of sex/gender. "Sex" & "gender" both used for sex. Participants treated as binary sex. | Educational interventions: planned continuing professional education seminars, continuous remote education on COPD diagnosis & management. | 12 indicators of good QoC reflecting best-practice COPD management. | <ul style="list-style-type: none"> • Specific QoC indicators for COPD patients often favoured men. • Several gender disparities seen at baseline disappeared at 24 months: • Composite global QoC indicator at baseline was significantly higher in men than women (OR: 0.74; 95% CI: 0.57-0.96), but nonsignificant at 24 months (OR: 0.96; 95% CI: 0.72-1.29). • General educational interventions not targeting sex can improve the disparity in QoC. |

| Author, year, country | Aim, study design | Sample size, participants, setting | Definition or clarification of sex/gender | Intervention type | Outcome & measures | Results/main findings |
|--------------------------------|--|---|---|--|--|---|
| Johansson et al., 2022, Sweden | To explore relationships between standardised tests & self-reported questionnaire used in a home rehabilitation program. Cross sectional study, secondary analysis. | 302 community dwelling women (197) & men (105) (mean age 80 years) with broad range of health conditions requiring rehabilitation. Home rehabilitation program. | No definition of sex/gender. Participants treated as binary sex. Gender roles incorporated. | Up to 12 weeks' training in person's home & neighbourhood, led by interdisciplinary team of occupational therapists, physiotherapists, rehabilitation assistants. | Standardised instruments testing daily living activities, motor function, & quality of life compared with questionnaire about self-rated health. | <ul style="list-style-type: none"> • Gender/sex differences found within & between assessment instruments. • Women tended to live alone, men with woman who cared for them; influenced daily living assessments. • Staff concurred with women's assessments of daily living tasks more than men's; interpreted as omission of traditional male tasks from assessments. • Person-centred, gender-aware assessment instruments are necessary. |
| Prioste et al., 2017, Portugal | To investigate psychosocial gains perceived by overweight adolescents attending a weight management program & to analyse gender-specific differences. Cross sectional study. | 70 overweight adolescents (52.9% female) aged 12-18 years being treated at a hospital paediatric obesity clinic. 12-week weight management program. | No definition of sex/gender. Participants treated as binary sex; social roles considered. | Weight-management program. 3 sessions: medical (motivational interview, physical examination, self-image assessment), nutritional (3-day food recall, counselling), physical activity (assessment, recommendations). | Adherence to Weight Control Questionnaire (AWCQ), Impact of Weight on Quality of Life-Lite (IWQL-Lite), Adolescent Lifestyle Profile (ALP-R2). | <ul style="list-style-type: none"> • Gender & psychosocial variables influence experience of weight management programs. • Weight had greater impact on body self-esteem of girls than boys, at baseline & week 12 follow-up. • Boys reported higher self-efficacy & adherence as well as greater perception of benefits of the intervention at week 12 follow-up. • No significant difference in BMI changes between girls & boys. |

| Author, year, country | Aim, study design | Sample size, participants, setting | Definition or clarification of sex/gender | Intervention type | Outcome & measures | Results/main findings |
|------------------------------|--|--|--|---|---|---|
| Schutt et al., 2015, Germany | To evaluate whether monotherapy (lifestyle or medication: metformin or sulfonylurea) has gender-specific effects on glycaemic control &/or body weight in patients with diabetes. Observational study. | 9,108 patients (49.3% women) with type 2 diabetes. Data from 129 diabetes centres: DPV-Wiss database, a standardised, prospective, multicentre, computer-based documentation of diabetes care & outcome. | No definition of sex/gender. Participants treated as binary sex. Include in introduction a reference to “psychosocial factors”. Use “gender” to mean sex & gender. | Diabetes treatment including education and medication | Blood glucose (HbA1c) & body weight (BMI) before & after therapy. | <ul style="list-style-type: none"> • Antidiabetic treatments have different effects on body weight & blood glucose for women & men. • Body weight & blood glucose differences were inverse: women had higher body weight reductions during lifestyle, metformin, or sulfonylurea treatment; men showed higher blood glucose reductions during lifestyle or metformin treatment. |

Table B4. Question 4: Are there any existing measures/health promotion tools/interventions/ programs that could be tailored and piloted nationally to improve health equity and health literacy for women in priority populations?

| Author, year, country | Aim, study design | Sample size, participants, setting | Definition or clarification of sex/gender | Method, search | Outcome measures | Results/main findings |
|--|--|---|--|---|--|--|
| Hawkins et al., 2021, international | How can providers work with refugee women to prevent adverse health outcomes & intervene at multiple levels to improve their health outcomes after resettlement? Scoping literature review | 52 articles, 3 books, 8 other sources, on refugee women. | Binary sex assumed; acknowledgment of “gender identity”; “gender” also used for “sex”. | Databases: Google Scholar, JSTOR, Global Health, PubMed, CINAHL, Sociological Abstracts, Social Service Abstracts, published 2009–2019. English language? Not stated. | Aspects of cultural safety (social-ecological model). Prevention of adverse health outcomes. | <ul style="list-style-type: none"> • Multi-level factors contribute to good health outcomes (e.g., personal, interpersonal, structural). • Need to address language barriers, improve provider-patient communication, ensure appropriate medical & mental health screening. • Inter-organisational awareness & communication are vital. • Providers should work with community leaders to educate, collaborate, facilitate understanding, bolster social support. |
| Hostetter et al., 2022, United States of America | To identify primary barriers & facilitators to healthcare access & health literacy in a sample of transgender & nonbinary people. Qualitative study. | 7 focus groups, total of 46 transgender & nonbinary people. Urban, suburban, & rural locations in Colorado. | Self-identified gender, well defined. | Small group discussions, 5 primary questions. | Experiences finding & using healthcare information & services. | <ul style="list-style-type: none"> • Participants worked not only to increase their own health literacy but also that of their medical providers; often found lack of provider health literacy. • Barriers to accessing care: difficulty identifying & physically reaching care, cost & insurance, negative experiences with healthcare providers & staff, exclusionary forms & processes. • Facilitators to accessing care: positive experiences with healthcare providers & staff, inclusive forms & processes. |

| Author, year, country | Aim, study design | Sample size, participants, setting | Definition or clarification of sex/gender | Method, search | Outcome measures | Results/main findings |
|--------------------------------------|--|--|--|--|---|---|
| Ireland & Maypilama, 2020, Australia | To demonstrate development of a reproductive health literacy framework for Yolnu (Indigenous) women in the Northern Territory: "Caring for Mum on Country". Participatory action research (qualitative study). | 53 Yolju women, one Yolju man. North East Arnhem Land. | Binary sex assumed. Noted as limitation. | Iterative anthropological methods, e.g., fieldwork, in-depth interview, discussions. Conducted in 7 languages (including English) with translator where necessary. | Reproductive health literacy & knowledge. | <ul style="list-style-type: none"> • Culturally responsive framework that privileges Yolju culture & knowledge can improve reproductive health. • Health care providers can learn from 2-way (Yolju & Western) medical models. |
| Jawahar et al., 2023, Australia | To describe a health literacy development project that is culturally and linguistically relevant to former-refugee communities using Ophelia (Optimizing Health Literacy & Access) process. Research protocol (qualitative methods). | Former refugee community: Karen people from Myanmar aged 18+, living in Melbourne. | No definition; binary "gender" appears to be used for "sex". | Semi-structured interviews based on the Conversational Health Literacy & Assessment Tool (CHAT). | Supportive professional & personal relationships, health behaviours, access to health information, use of health services, health promotion barriers & support. | <p>Expected outcome:</p> <ul style="list-style-type: none"> • Will develop modified Ophelia framework by co-designing contextually, culturally appropriate, & meaningful action ideas to respond to identified health literacy strengths, needs, & preferences of the community. |

| Author, year, country | Aim, study design | Sample size, participants, setting | Definition or clarification of sex/gender | Method, search | Outcome measures | Results/main findings |
|------------------------------------|---|---|---|---|---|--|
| Sivertsen et al., 2021, Australia. | To investigate community women's knowledge & experiences of women's health community services, & identify gaps in community women's health programs. Qualitative study. | 13 women's health service clients aged 18-74 years attending clinics in Northern New South Wales Local Health District (NNSWLHD). | Clients of women's health services: ie self-identified. No definition of sex or gender. | Semi-structured interview: 6 questions. | Knowledge of women's healthcare needs & their experience of services. | <ul style="list-style-type: none"> • Women in rural & regional Australia experienced deficits in services, lengthy wait times, poor access. • Women want better access & more awareness of women-specific services. • Women want to be heard on the health services they need. • Registered nurses need skills training & support to be able to conduct research. • Engagement of community nurses in research could lead to better care. |

Table B5. Question 5: What are the gaps in data collection? e.g. instances where standard reporting does not include disaggregation by sex and/or gender and identify disparities in health outcomes on the basis of sex.

| Author, year, country | Aim, design | Search strategy | Number of papers included | Results/main findings |
|---------------------------------------|--|---|--|---|
| Antequera et al., 2022, international | To describe extent to which sex is analysed & reported in a cross-section of Cochrane systematic reviews (SRs) of interventions; to assess association with gender (=sex) of main authors. Systematic literature review. | Searched SRs published 2018 in Cochrane Database of Systematic Reviews. | 516 eligible reviews of interventions. | <ul style="list-style-type: none"> • Sex consideration was frequently missing from Cochrane SRs. • 56 reviews included sex-related reporting in the abstract, 90 considered sex in their design, 380 provided sex-disaggregated descriptive data, 142 reported main outcomes or performed subgroup analyses by sex, 76 discussed potential impact of sex or the lack of such on the interpretations of findings. • Structured guidance on sex-related analysis & reporting is needed to enhance the external validity of findings. • Women represented 53.1% & 42.2% of first & last authorships, respectively. • Women authors (first & last) more likely to report sex in at least one of review sections (OR 2.05; CI 95% 1.12-3.75, P=0.020) than no women in those positions. |
| Antequera et al., 2020, international | To assess female representation in primary studies underpinning recommendations from clinical guidelines & systematic reviews for sepsis treatment in adults. Bibliometric study. | SRs on sepsis treatment published in the Cochrane Database of Systematic Reviews (CDSR). Removed studies pertaining to sex-specific diseases, included quasi-randomised, randomised clinical trials (RCTs), & observational studies. Analysed female participation-to-prevalence ratio (PPR). | 277 studies published 1973 - 2017. | <ul style="list-style-type: none"> • Sex data available for 246 studies; share of female participation was 40%. • Women under-represented relative to their share of the sepsis population (female PPR: 0.78). • 57 studies reported sex-disaggregated results. • In univariate analyses, non-intensive care unit setting & consideration of other social health determinants were significantly associated with greater female participation (P < 0.001 and P = 0.023, respectively). • In regression models, studies published 1996 or later were likely to report sex; RCTs were unlikely to do so (P = 0.019 and P < 0.001, respectively). |

| Author, year, country | Aim, design | Search strategy | Number of papers included | Results/main findings |
|------------------------------------|--|--|--|---|
| Barlek et al., 2022, international | To identify the prevalence of sex inclusiveness of participants in human clinical trials after the passage of National Institutes of Health (NIH) & United States Congress policies in 2015 & 2016 to increase female enrolment in clinical research. Observational analysis of data from registered clinical trials published in 3 high-impact biomedical journals. | All original manuscripts involving human clinical research that allowed for enrolment of eligible female & male participants published in the Journal of the American Medical Association (JAMA), The Lancet, The New England Journal of Medicine, 1 Jan 2015 – 31 Dec 2019. | 1442 manuscripts with 4,765,783 human subjects. | <ul style="list-style-type: none"> • Sex bias remains prevalent in human clinical research trials, despite improvements in NIH-funded trials. • More men (56%) than women (44%) included in all 3 journals ($P < 0.0001$). • Sex matching more than 80% was found in 24.6% of publications. • In studies funded by industry (43.7%), more men than women (60.8% vs 39.2%, $P < 0.0001$) were enrolled. • NIH funded 10.2% of studies enrolling significantly more women than men (52.7% vs 47.3%, $P < 0.0001$). • North America & Europe contributed 82.6% of the studies enrolling significantly more men than women. • The US contributed most studies (36.1%) enrolling significantly more men than women (55.5% vs 45.5%, $P < 0.0001$). • Of medical specialties, cardiovascular disease had most manuscripts (19%) enrolling significantly more men than women (64.9% vs 35.1%, $P < 0.0001$). |
| Day et al., 2019, international | To identify the extent to which sex & gender impact research findings by examining original investigations on diabetes for the integration of sex & gender in study reporting. Literature review | Sought original investigations on diabetes published 1 Jan - 31 Dec 2015 in the top 5 general medicine journals & top 5 diabetes-specific journals (2015 impact factor). Data extracted on sex & gender integration in title, abstract, introduction, methods, results, discussion, & limitations. | 155 papers reporting 115 randomised controlled trials (RCTs) & 40 observational studies. | <ul style="list-style-type: none"> • Sex & gender are poorly integrated in current diabetes original investigations. • Sex & gender were rarely incorporated in article titles, abstracts, & introductions. Most methods sections did not describe plans for sex or gender analyses. • Most articles (151, 97.4%) reported sex and/or gender of participants; only 10 (6.5%) reported all study outcomes separately by sex or gender. • Discussion of sex-related issues was incorporated into 21 (13.5%) reports. • 1 paper (0.6%) discussed gender-related issues. • Reports of RCTs performed more poorly on multiple sex or gender assessment metrics compared to observational studies. |

| Author, year, country | Aim, design | Search strategy | Number of papers included | Results/main findings |
|-------------------------------------|---|--|---|---|
| Hallam et al., 2023, Australia | To determine how sex & gender are being incorporated into Australian medical research publications, & if this is influenced by journals endorsing the International Committee of Medical Journal Editors (ICMJE) guidelines, containing criteria for sex & gender reporting. Literature review. | Searched original research articles published in Australia's top 10 medical journals in 2020: ANZ Journal of Surgery, Medical Journal of Australia, ANZ Journal of Psychiatry, ANZ Journal of Public Health, Respiriology, Clinical & Experimental Ophthalmology, Clinical & Experimental Pharmacology & Physiology, Immunology & Cell Biology, Journal of Gastroenterology & Hepatology, Journal of Paediatrics & Child Health | 1,136 papers with 990 human participant populations. | <ul style="list-style-type: none"> • Reporting and analysis of sex and gender data in health research in Australian medical journals requires improvement. • Sex &/or gender were reported for 873 (88.2%) human populations; 480 used conflicting terminology. • Only 14 (1.6%) described how sex or gender were determined. • Primary outcome/key aim was stratified by sex &/or gender for 249 (29.2%) participant groups; influence of sex &/or gender on results was discussed for only 171 (17.3%). • No significant association between endorsement of ICMJE guidelines & adherence to sex & gender criteria. |
| Heidari et al., 2021, international | To systematically review published COVID-19 vaccine trials, both interventional & observational, to assess the quality of reporting of sex & gender. Systematic review. | Searched PubMed, cross-referenced with WHO data. Analysed using SAGER guidelines (Sex & Gender Equity in Research). | 75 papers reporting 42 interventional studies & 33 observational studies. | <ul style="list-style-type: none"> • Sex and gender have implications for COVID-19 vaccine efficacy; poor reporting of sex & gender has implications for recovery from COVID-19 & public health. • Only 17 articles (24%) presented main outcome data disaggregated by sex. • Only 13% included any discussion of implications of their study for women & men. |

| Author, year, country | Aim, design | Search strategy | Number of papers included | Results/main findings |
|--|--|--|--------------------------------------|---|
| Heidari et al., 2016, international | To describe the rationale for an international set of guidelines to encourage a more systematic approach to the reporting of sex & gender in research across disciplines. Internet survey, literature search | Panel of 13 experts from 9 countries developed guidelines through series of teleconferences, conference presentations, 2-day workshop. Internet survey of 716 journal editors, scientists, other members of international publishing community. Literature search on sex & gender policies in scientific publishing. (No details of databases or journals reported.) | Not reported. 100 journals included. | <ul style="list-style-type: none"> • Necessity for guidelines to ensure sex & gender information is reported in study design, data analyses, results. interpretation of findings. • Average proportion of respondents in each of the 4 samples who reported having sex &/or gender policies at their journals was 7%. • In the random sample of 100 journals & the EASE & ISAJE groups, most (75 %) were unsure or unwilling to introduce sex & gender considerations as requirements in Instructions for Authors. • Female respondents were more likely to support sex & gender reporting policies than male respondents. |
| Mansukhani et al., 2016, international | To determine if sex bias exists in human surgical clinical research, to determine if data are reported & analysed using sex as an independent variable, & to identify specialties in which the greatest & least sex biases exist. Literature review (bibliometric analysis). | Searched top 5 ranked American non-specialty surgical journals which publish internationally & across specialties, 1 Jan 2011 - 31 Dec 2012: Annals of Surgery, American Journal of Surgery, JAMA Surgery, Journal of Surgical Research, Surgery. | 1303 original peer-reviewed papers. | <ul style="list-style-type: none"> • Sex bias exists in human surgical clinical research. • Of surgical specialties, colorectal surgery had the best matching of male & female participants, cardiac surgery had the worst. • 17 (1.3%) included men only, 41 (3.1%) included women only, 1020 (78.3%) included women & men. 225 (17.3%) did not document sex of participants. • Although female participants represent more than 50% of total number, considerable variability in number of male (46 111 818), female (58 805 665), & unspecified (10 459 730) participants. • 38.1% reported data by sex, 33.2% analysed data by sex, 22.9% discussed sex-based results. • Sex matching of research participants was poor, with 45.2% of studies matching inclusion of both sexes by 50%. |

| Author, year, country | Aim, design | Search strategy | Number of papers included | Results/main findings |
|--|--|--|---|--|
| Mena et al., 2019, international | To assess sex & gender sensitivity in intersectionality-based epidemiological analyses (intersection of sex/gender & race/ethnicity) of diabetes, smoking, & physical activity. Scoping review . | Searched PubMed. | 16 on adults, in English: diabetes = 5, smoking = 8, physical activity = 3. | <ul style="list-style-type: none"> • Sex/gender was considered in every included publication. • Sex/gender was exclusively operationalised as binary. • Sex/gender was rarely linked to potential solutions. |
| Merone et al., 2022, international | To determine extent of research into the sex & gender gap in medical research & assess extent of misogyny in modern medical research. Systematic scoping review. | Searched PubMed, Science Direct, PsychINFO, Google Scholar for papers published 1 Jan - 31 Dec 2019. | 17 | <ul style="list-style-type: none"> • Gender gap & misogyny remain in contemporary medical literature. • 12/17 examined the gender gap in medical research. • 5/17 demonstrated misogyny, assessing female attractiveness for alleged medical reasons. • Women are broadly under-represented in medical literature. • Sex & gender are poorly reported & inadequately analysed in research. |
| Mondini Trissino da Lodi et al., 2022, international | To understand how the available treatments apply to women affected by patellar tendinopathy. Systematic review. | Searched PubMed, Cochrane, Web of Science; no date limits. | 136 papers published 1983-Feb 2020. | <ul style="list-style-type: none"> • Women represent a minority of patients studied for patellar tendinopathy; “gender blindness”. • Only 78 women (2%) were referred to in the entire literature on treatment of patellar tendinopathy. • Only 5% of the retrieved articles that focused only or mostly on men considered that to be a limitation. • 6 (4%) papers did not specify patient sex. • 2 of the remaining 130 papers included only women, 25 included only men, 103 (80%) included both sexes; only 1 separated data by sex. • 7 other papers performed sex-specific analysis, without discussion. |

| Author, year, country | Aim, design | Search strategy | Number of papers included | Results/main findings |
|--|--|---|--|--|
| Noubiap et al., 2022, international | To measure sex disparities in participant recruitment to randomised controlled trials (RCTs) of atrial fibrillation (AF), determine associated factors, & describe frequency of outcomes reported by sex. Systematic review & meta-analysis. | MEDLINE was searched to identify all RCTs of AF published 1 Jan 2011 - 20 Nov 2021. | 142 trials reporting on 133,532 participants. | <ul style="list-style-type: none"> • Women are substantially less represented in RCTs of AF (under-enrolled by 12.5%). • Sex-stratified reporting of primary outcomes is infrequent: 36 trials (25.4%) reported outcomes by sex; 29 (80.6%) of these statistically tested sex-by-treatment interaction. • Female enrolment was higher in trials with higher sample size (<250 vs. >750, aOR:1.065, 95% CI: 1.008-1.125). |
| Prakash et al., 2018, United States of America | To identify if sex bias continues to exist in present day clinical trials entered into ClinicalTrials.gov. Literature review. | Data abstracted from all interventional Phase I, II, & III clinical trials with adult subjects entered into ClinicalTrials.gov 1 Jan 2011 - 31 Dec 2013 & completed by 30 Nov 2015. | 1,501 studies with 170,331 (49.0%) female & 177,656 (51.1%) male subjects. | <ul style="list-style-type: none"> • Sex bias is present in current day clinical trials. • Significant difference in subject sex included in Phase I (64.1% male/35.9% female), Phase II (48.4% male/51.6% female), & Phase III (51.0% male/49.1% female) clinical trials ($p < 0.05$). • Significant difference in subject sex included in industry (50.7% male/49.3% female), National Institutes of Health (NIH) (56.6% male/43.4% female), Other US Federal (62.5% male/37.5% female), & "Other" funded (53.4% male/46.6% female) clinical trials ($p < 0.0001$). • Significant difference in subject sex between randomised (50.5% male/49.6% female) & nonrandomised (54.8% male/45.2% female) clinical trials ($p < 0.0001$). |

| Author, year, country | Aim, design | Search strategy | Number of papers included | Results/main findings |
|---------------------------------|--|---|--|---|
| Wainer et al., 2020, Australia. | To summarise findings sourced from key documents about history & mechanisms in N America & Europe facilitating integration of sex & gender into health research; to provide data on policies & practices of Australian funding agencies & peer-reviewed journals relating to collection, analysis, & reporting of sex- and gender-specific health data. Literature review & mixed methods. | Web-based search for N American & European background data. Web-based search 1-5 Dec 2017 of Australian agencies & journals. Semi-structured telephone interviews 5 Jan-14 March 2018 with key informants from these organisations. | Australia: 20 organisations (incl. 10 funding organisations) & 10 journals. 12 key informants (incl. 5 women): 7 heads of funding agencies, 5 editors of peer-reviewed journals. | <ul style="list-style-type: none"> • 8 of 10 funding agencies had no sex/gender policies. • NHMRC & Diabetes Australia had policies on collection, analysis, or reporting of sex- & gender-specific health data. Only NHMRC specifically recommended analysis & reporting of sex- & gender-specific data. • 4 of 10 journals had no policies on collection, analysis, & reporting of sex- & gender-specific health data. • 6 journals either followed reporting guidelines of the International Committee of Medical Journal Editors (ICMJE) or the Animal Research Reporting of In Vivo Experiments (ARRIVE) guidelines. • Key informants from journals said that despite no publicly available policies on sex & gender health data, there were internal rules followed by editors, reviewers, & authors. • Lack of awareness & high cost of funding sex- & gender-specific research were perceived as barriers to policy change. • Most key informants endorsed creating policies on collection, analysis, & reporting of sex- & gender-specific health data. • Need for policy change & guidance from larger organisations to facilitate organisational change. |
| Welch et al., 2017, Canada | To assess extent & nature of reporting about sex &/or gender, & whether sex & gender analysis (SGA) was carried out, in sample of Canadian randomised controlled trials (RCTs) with human participants. Literature review. | Search Medline , 1 Jan 2013 - 23 Jul 2014. Validated filter for RCTs, plus terms for Canada. | 100 papers. Median sample size 107 participants (range 12-6085). | <ul style="list-style-type: none"> • Poor uptake of sex & gender considerations in Canadian RCTs. • 98% described demographic composition of participants by sex. • Only 6% conducted subgroup analysis across sex. • Only 4% reported sex-disaggregated data. • No paper defined sex or gender. • No publication performed comprehensive sex & gender analysis. |

Appendix C. Reporting of Sex and/or Gender in the Studies Included¹²

| | Reported in introduction whether sex &/or gender differences can be expected | Ensured adequate representation of women & men in methods section* | Included variables or information that enabled sex-based or gender-based analysis in methods section | Reported how sex &/or gender was assigned (e.g., self-report, genetic testing) in method section ** | Reported data disaggregated by sex or gender; sex or gender differences & similarities are described | Discussed sex differences or applied a gender perspective in discussion section | Discussed implications of results from a sex &/or gender perspective | Used 'sex' & 'gender' appropriately | Score |
|---------------------------------|--|--|--|---|--|---|--|-------------------------------------|-------|
| Barha et al. 2017 | Yes | Yes | Yes | No | Yes | Yes | Yes (sex only) | Yes | 7/8 |
| Brucki et al. 2023 | Yes | Yes | Yes | Yes (review) | Yes | Yes | Yes | No | 7/8 |
| Cropsey et al. 2014 | Yes | Yes | Yes | No | Yes | Yes | Yes | No | 6/8 |
| Fogg et al. 2019 | Yes | Yes | Yes | Yes (45 & Up Study database) | Yes | Yes | Yes | Yes | 8/8 |
| Gauci et al. 2022 | Yes | Yes | Yes | Yes (review) | Yes | Yes | Yes | Yes | 8/8 |
| Guerrero et al. 2014 | Yes | Yes | Yes | No | Yes | Yes | Yes | No | 6/8 |
| Hailemariam et al. 2021 | Yes | Yes | Yes | Yes (HILDA database) | Yes | Yes | Yes | No | 7/8 |
| Hamilton et al. 2022 | Yes | Yes | Yes | Yes (hospital records) | Yes | Yes | Yes | No | 7/8 |
| Hammarberg et al. 2020 | Yes | No (survey) | Yes (self-report) | Yes | Yes | Yes | Yes | Yes | 7/8 |
| Harreiter & Kautzky-Willer 2018 | Yes | Yes | Yes | Yes (review) | Yes | Yes | Yes | Yes | 8/8 |
| Hashmi et al. 2023 | No | Yes | Yes | Yes (HILDA database) | Yes | Yes | Yes | No | 7/8 |
| Huded et al. 2018 | Yes | Yes | Yes | Yes (hospital records) | Yes | Yes | Yes | Yes | 8/8 |

¹² Modified from <https://ease.org.uk/wp-content/uploads/2023/01/EASE-SAGER-Checklist-2022.pdf>

| | Reported in introduction whether sex &/or gender differences can be expected | Ensured adequate representation of women & men in methods section* | Included variables or information that enabled sex-based or gender-based analysis in methods section | Reported how sex &/or gender was assigned (e.g., self-report, genetic testing) in method section ** | Reported data disaggregated by sex or gender; sex or gender differences & similarities are described | Discussed sex differences or applied a gender perspective in discussion section | Discussed implications of results from a sex &/or gender perspective | Used 'sex' & 'gender' appropriately | Score |
|-------------------------|--|--|--|---|--|---|--|-------------------------------------|-------|
| Hyun et al. 2017 | Yes | Yes | Yes | Yes (primary health database) | Yes | Yes | Yes | No | 7/8 |
| Isgro et al. 2020 | Yes | Yes | Yes | Yes (medical records) | Yes | Yes | Yes | No | 7/8 |
| Jarallah & Baxter, 2019 | Yes | Yes | Yes | Yes (database: BNLA) | Yes | Yes | Yes | No | 7/8 |
| Johansson et al. 2022 | Yes | Yes | Yes | No | Yes | Yes | Yes (sex only) | No | 6/8 |
| Kim et al. 2023 | Yes | Yes | Yes | Yes (ANZDATA & ANZOD databases) | Yes | Yes | Yes | Yes | 8/8 |
| Ladhani et al. 2020 | Yes | Yes | Yes | Yes (existing databases) | Yes | Yes | Yes | No | 7/8 |
| Lee et al. 2019 | Yes | Yes | Yes | Yes (registry) | Yes | Yes | Yes | Yes | 8/8 |
| Looi et al. 2018 | Yes | Yes | Yes | Yes (hospital records) | Yes | Yes | Yes | No | 7/8 |
| McBride et al. 2022 | Yes | NA (review) | Yes | No | Yes | Yes | Yes | No | 5 |
| Mnatzagnian et al. 2016 | Yes | Yes | Yes | Yes (hospital records) | Yes | Yes | Yes | No | 7/8 |
| Mnatzagnian et al. 2019 | Yes | Yes | Yes | Yes (hospital records) | Yes | Yes | Yes | Yes (sex only) | 8/8 |
| Murphy et al. 2019 | Yes | Yes | Yes | Yes (registry) | Yes | Yes | Yes | No | 7/8 |
| Page et al. 2019 | No | Yes | Yes | Yes (registry) | Yes | No | No | Yes | 5/8 |
| Perera et al. 2021 | Yes | Yes | Yes | No | Yes | Yes | Yes | No | 6/8 |

| | Reported in introduction whether sex &/or gender differences can be expected | Ensured adequate representation of women & men in methods section* | Included variables or information that enabled sex-based or gender-based analysis in methods section | Reported how sex &/or gender was assigned (e.g., self-report, genetic testing) in method section ** | Reported data disaggregated by sex or gender; sex or gender differences & similarities are described | Discussed sex differences or applied a gender perspective in discussion section | Discussed implications of results from a sex &/or gender perspective | Used 'sex' & 'gender' appropriately | Score |
|----------------------------|--|--|--|---|--|---|--|-------------------------------------|-------|
| Prioste et al. 2017 | Yes | Yes | Yes | Yes (clinic data) | Yes | Yes | Yes | No | 7/8 |
| Riggs et al. 2014 | Yes | Yes | Yes | Yes (online survey data) | Yes | Yes | Yes | Yes | 8/8 |
| Schutte et al. 2023 | Yes | Yes | Yes | Yes (medical database) | Yes | Yes | Yes | No | 7/8 |
| Wang et al. 2022 | Yes | Yes | Yes | Yes (hospital database) | Yes | Yes | Yes (sex only) | Yes (sex only) | 8/8 |
| Worrall-Carter et al. 2016 | Yes | Yes | Yes | Yes (hospital records) | Yes | Yes | Yes | No | 7/8 |

* Where sex or gender representation was beyond researchers' control, such as in use of existing data or where there are sex differences in disease prevalence (e.g., cardiovascular disease), this column was scored Yes.

** This column was scored Yes when researchers used existing data (information not in their control); in no case did researchers using existing data specify how sex or gender was assigned.

Appendix D. Clinical Practice Guidelines

TABLE D1: List of guidelines and inclusion of sex and/or gender information

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
|---|--|--|------------------|---|---|--|-----------------------|
| Ambulance Victoria | Clinical Practice Guidelines ALS (Advanced life support) for Ambulance and MICA (Mobile Intensive Care Ambulance) Paramedics, version 1.9, 2019 https://www.ambulance.vic.gov.au/wp-content/uploads/2019/07/Clinical-Practice-Guidelines-2018-Edition-1.9-1.pdf | Ambulance Victoria | Emergency | “Gender”, “male” not found in text search. “Sex” found once: “same-sex”. “Female” used. | Sex-related management & referral of acute alcohol intoxication. Female & male patients can present differently (cardio). Clinical red flag for pregnant women. “Female genital cutting” to be treated sensitively. | Be mindful of gender cues in conversation: patient may be referred to as they/them. Gender safety: consider any specific safety needs or concerns relating to person’s gender. | No details of method |
| Australasian College of Dermatologists | Practice guidelines for teledermatology in Australia, 2020 Abbott, et al. (2020), Practice guidelines for teledermatology in Australia. <i>Australas J Dermatol</i> , 61: e293-e302. DOI: 10.1111/ajd.13301 | Australasian College of Dermatologists | Dermatology | No sex or gender terms identified in text search. | No sex-related data or information. | No gender considerations. | No details of method. |

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
|---|---|---|---------------------|---|---|---|--|
| Australasian Sexual and Reproductive Health Alliance (ASRHA) | Australian sexually transmitted infection (STI) management guidelines for use in primary care, 2022 update Ong et al. (2023). Australian sexually transmitted infection (STI) management guidelines for use in primary care, 2022 update. <i>Sexual Health</i> , 20(1), 1-8. DOI:10.1071/SH22134 | Endorsed by Blood Borne Viruses and Sexually Transmissible Infections Standing Committee. Accepted by RACGP | Infectious diseases | Terms used. Refers to “gender-diverse” people. No definition of gender. | Precautions by different type of STIs for men who have sex with men, or pregnant women. | Considerations for transgender & gender diverse people. | “Consultation”; no formal method given. |
| Australia & New Zealand Musculoskeletal Clinical Trials | An Australian Living Guideline for the Pharmacological Management of Inflammatory Arthritis, 2022 https://files.magicapp.org/guideline/bb6a4ff1-031c-429d-b1ce-5c907287251b/published_guideline_6122-1_15.pdf | NHMRC | Orthopaedics | “Gender”, “female”, “woman”, not identified in text search. “(Male) sex” appears once; not defined. | Male sex as socioeconomic predictor. | No gender considerations. | GRADE |
| Australian & New Zealand Hip Fracture Registry | Australian and New Zealand guideline for hip fracture care - improving outcomes in hip fracture management of adults, 2014 https://anzhfr.org/wp-content/uploads/sites/1164/2021/12/ANZ-Guideline-for-Hip-Fracture-Care.pdf | NHMRC & 10 other organisations | Orthopaedics | “Sex” used once, not defined. “Gender” used twice, meaning sex. | Sex as risk factor. | No gender considerations. | ADAPTE method, AGREE II, used original NICE assessments of GRADE |

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
|---|--|---|------------------|--|-------------------------------------|---------------------------|----------------------|
| Australian and New Zealand Anaesthetic Allergy Group | Perioperative Anaphylaxis Management Guidelines, 2022 https://www.anzca.edu.au/resources/professional-documents/endorsed-guidelines/anaphylaxis-guideline-2022.pdf | ANZCA | Anaesthesia | No sex or gender terms identified in text search. | No sex-related data or information. | No gender considerations. | No details of method |
| Australian and New Zealand College of Anaesthetists & Faculty of Pain Medicine (ANZCA) | Standards for Anaesthesia, 2023 https://www.anzca.edu.au/resources/college-publications/anaesthesia-standards-2022-pilot.pdf | ANZCA | Anaesthesia | No sex or gender terms identified in text search. | No sex-related data or information. | No gender considerations. | No details of method |
| Australian Childhood Stroke Advisory Committee | Australian Clinical Consensus Guideline: The diagnosis and acute management of childhood stroke, 2019 Medley et al. (2019). Australian Clinical Consensus Guideline: The diagnosis and acute management of childhood stroke. <i>International Journal of Stroke</i> , 14(1):94-106. DOI:10.1177/1747493018799958 | Stroke Foundation of Australia Australian and New Zealand Childhood Stroke Society | Paediatrics | “Gender”, “sex”, “female”, “male”, “girl”, “boy” not found in text search. | No sex-related data or information. | No gender considerations. | GRADE |

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
|--|---|---|------------------|---|--|---|---------------------------|
| Australian Diabetes Society | Australian Evidence-Based Clinical Guidelines for Diabetes, 2020 https://www.diabetessociety.com.au/2021/11/04/20Guideline-Australian-Evidence-Based-Clinical-Guidelines-for-Diabetes.pdf | NHMRC | Endocrinology | “Sex”, “gender”, “female”, “male” not identified in text search. Use “women”, “men”. | Cardiovascular risk factors for women & men. Considerations of women for medical device & medication. | No gender considerations. | GRADE |
| Australian Hepatology Association | AHA Consensus-based Nursing Guidelines for the Care of People with Hepatitis B, Hepatitis C, Advanced Liver Disease and Hepatocellular Carcinoma, 2019 https://www.hepatologyassociation.com.au/public/23/files/Resources/AHA_PUBLICATION%20LAYOUT_FINAL.pdf | APNA ASHM GESA Hepatitis Australia | Nursing | “Sex, “gender” not found in text search. “Female” appears twice. | Sex-related risk factors. | No gender considerations. | “Consensus-based” method. |
| Australian Institute of Sport | Concussion and Brain Health, Position Statement, 2024 https://www.concussioninsport.gov.au/_data/assets/pdf_file/0004/1133545/37382_Concussion-and-Brain-Health-Position-Statement-2024-FA.pdf | RACGP | Sports medicine | Both defined, used correctly. | Sex-related data & information: prevalence, physical differences. Lack of sex-specific research noted. | Lack of gender-specific evidence noted. | No details of method |

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
|---|---|--|------------------|--|--|---|------------------|
| Australian Professional Association for Trans Health (AusPATH) | Position statement on the hormonal management of adult transgender and gender diverse (TGD) individuals, 2019 Cheung, et al. (2019). Position statement on the hormonal management of adult transgender and gender diverse individuals. <i>Med J Aust</i> , 211(3), 127-133. DOI: 10.5694/mja2.50259 | Endorsed by AusPATH, Endocrine Society of Australia (ESA), Royal Australasian College of Physicians (RACP) | Endocrinology | Definitions of gender identity, gender expression, sex assigned at birth. | Transgender-related hormone therapy recommendations. | Establish & affirm person’s gender identity. Use preferred name & pronoun. Use legal identity markers for Medicare. Hormonal therapy: effective in aligning physical characteristics with gender identity; in addition to respectful care, can improve mental health. | GRADE |
| Australian Technical Advisory Group on Immunisation (ATAGI) | Australian immunisation handbook, 2018, updated 2024 Australian Technical Advisory Group on Immunisation (ATAGI). <i>Australian Immunisation Handbook</i> . Australian Government Department of Health and Aged Care, Canberra, 2022, immunisationhandbook.health.gov.au . | NHMRC | Immunology | “Gender” used to mean “sex”. “Sex” used in connection with sexual intercourse. “Female”, “male” used. “Women” used in conjunction with childbearing. | Sex-specific risks, treatment. | None identified. | GRADE |

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
|---|--|--------------------------|------------------|--|--|--|--|
| Autism CRC (Cooperative Research Centre) | A National Guideline for the Assessment and Diagnosis of Autism Spectrum Disorders (ASD) in Australia, updated 2023 https://www.autismcrc.com.au/best-practice/assessment-and-diagnosis | NHMRC | Paediatrics | “Sex” not defined. Sex & gender used interchangeably. Define gender identity for transgender people. | Sex-related prevalence, assessment, diagnosis. Consider how ASD can manifest differently in women & men. | Evidence that being transgender or gender diverse is more common in people on the autism spectrum than in broader population. Sensitivity to gender-related language important during assessment of ASD. | Adapted GRADE; consensus |
| Cancer Council Australia | Clinical practice guidelines for the diagnosis and management of Barrett’s oesophagus and early oesophageal adenocarcinoma, 2015 Whiteman, et al. (2015). Australian clinical practice guidelines for BE and EAC. <i>J Gastroenterol Hepatol</i> , 30: 804-820. DOI:10.1111/jgh.12913 | Cancer Council Australia | Oncology | No definition. “Sex” & “gender” used for “sex”. | Sex-related prevalence & risk factors. | No gender considerations. | Cancer Council Australia guidelines method; consensus. |

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
|---------------------------------|---|---|------------------|---|--|---------------------------|--|
| Cancer Council Australia | Clinical practice guidelines for the prevention and diagnosis of lung cancer, 2022 (now live, with online updates) (391 pp version assessed) https://www.cancer.org.au/as-sets/pdf/guidelines-lung-cancer | Cancer Council Australia. Initial version endorsed by NHMRC. | Oncology | “Female gender” (= sex) found once in text search. “Sex”, “male” not found in text search. “Men and women” found once; “women” twice. | Limited sex-related data and information. | No gender considerations. | Cancer Council Australia guidelines method; consensus. |
| Cancer Council Australia | Clinical practice guidelines for the treatment of lung cancer, 2022 https://www.cancer.org.au/as-sets/pdf/guidelines-lung-cancer | Initial version endorsed by NHMRC | Oncology | No definition. “Gender” used for “sex”. “Women” & “men” used. | Sex-related prevalence. Sex-related psychotherapy intervention. | No gender considerations. | Cancer Council Australia guidelines method; consensus. |
| Cancer Council Australia | Clinical practice guidelines for the diagnosis and management of melanoma, 2021 https://wiki.cancer.org.au/australia/Guidelines:Melanoma | Original version endorsed by NHMRC | Oncology | No definition. “Sex” & “gender” used interchangeably. | Sex-related risk factors, prevalence, diagnosis, management. | No gender considerations. | Cancer Council Australia guidelines method; consensus. |
| Cancer Council Australia | Clinical practice guidelines for hepatocellular carcinoma (HCC) surveillance for people at high risk in Australia, 2023 https://app.magicapp.org/#/guideline/7585 | Approved by NHMRC Endorsed by RACGP | Oncology | Refer to “gender identities”, undefined, as part of sensitive care in general. Otherwise, gender = sex. | Sex-related HCC surveillance for people of Asia-Pacific & Sub-Saharan background; treatment recommendations. | No gender considerations. | GRADE |

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
|---|---|--|------------------|--|--|--|---|
| Cancer Council Australia | Clinical practice guidelines for the prevention, early detection and management of colorectal cancer, 2017; wiki updates 2023 https://www.cancer.org.au/clinical-guidelines/bowel-cancer/colorectal-cancer | NHMRC | Oncology | No definition. “Sex” & “gender” used interchangeably to mean sex. | Sex-related screening & prevalence. | No gender considerations. | Cancer Council Australia guidelines method; consensus. |
| Cancer Council Australia | Cancer pain management in adults, updated 2024 https://www.cancer.org.au/assets/pdf/cancer-pain-management-in-adults | Cancer Council Australia | Oncology | “Gender”, “sex”, “female”, “male”, “woman”, “man” not identified in text search. | No sex-related data or information. | No gender considerations. Suggest seeing other guidelines for “psychosocial concerns”. | Cancer Council Australia guidelines method; ADAPTE approach to assessing evidence |
| Cardiac Society of Australia and New Zealand | A Clinical Guide for Assessment and Prescription of Exercise and Physical Activity in Cardiac Rehabilitation. A CSANZ Position Statement, 2023 Verdicchio C, et al. (2023). A clinical guide for assessment and prescription of exercise and physical activity in cardiac rehabilitation. A CSANZ Position Statement. <i>Heart, Lung and Circulation</i> , 32(9), 1035-1048. DOI:10.1016/j.hlc.2023.06.854 | Cardiac Society of Australia and New Zealand. Funded by NHMRC. | Cardiology | “Sex” & “gender” (meaning sex) each identified once; neither term defined. “Women”, “men”, “female”, “male” not identified in text search. | No sex-related data or information, apart from statement that sex is not a factor in strength. | No gender considerations. | No details of method. |

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
|---|--|--------------------------|------------------|--|---|--|-------------------------------------|
| Centre of Perinatal Excellence (COPE) | Mental Health Care in the Perinatal Period: Australian Clinical Practice Guideline, 2018 https://www.cope.org.au/wp-content/uploads/2018/05/COPE-Perinatal-MH-Guideline_Final-2018.pdf Austin M-P, Highet N & the Expert Working Group. (2017). <i>Mental health care in the perinatal period: Australian clinical practice guideline</i> . Melbourne: Centre of Perinatal Excellence. | NHMRC | Obstetrics | Gender used correctly but not defined. | Focus on women. Consider male partner mental health assessment & screening in perinatal period. | Gender inequalities: woman as economically insecure, primary carer, subject to violence. Consider gender roles in parenting. Consider transgender parents. | GRADE |
| Childhood Hearing Australasian Medical Professionals network | Consensus guidelines on investigation and clinical management of childhood hearing loss, 2019 Sung et al. (2019), Childhood Hearing Australasian Medical Professionals network: Consensus guidelines on investigation and clinical management of childhood hearing loss. <i>J Paediatr Child Health</i> , 55: 1013-1022. DOI: 10.1111/jpc.14508 | Not stated | Paediatrics | “Gender”, “sex”, “female”, “male”, “girl”, “boy” not found in text search. | No sex-related data or information. | No gender considerations. | NHMRC levels of evidence; consensus |

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
|---|---|---|------------------|---|--|--|-------------------------------------|
| Children’s Health Queensland. Queensland Government | Diabetic Ketoacidosis (DKA) and Hyperosmolar Hyperglycaemic State (HHS) – Emergency management in children, 2024 https://www.childrens.health.qld.gov.au/for-health-professionals/queensland-paediatric-emergency-care-qpec/queensland-paediatric-clinical-guidelines/dka-hyperosmolar-hyperglycaemic-state | RACGP | Paediatrics | “Gender”, “sex”, “female”, “male”, “girl”, “boy” not found in text search. | No sex-related data or information. | No gender considerations. | No details of method |
| Clinical Oncology Society of Australia (COSA) | COSA guidelines for fertility preservation for people with cancer. Updated 2022 https://www.cancer.org.au/clinical-guidelines/cancer-fertility-preservation | CANTEEN Fertility Society of Australia & New Zealand | Oncology | Terms not defined. Sex used correctly. | Detailed information about women, men. | Psychosocial aspects relevant to women, men. | NHMRC evidence hierarchy; consensus |
| Commonwealth of Australia Department of Health and Aged Care | 2023 Australian Guideline for assessing and managing cardiovascular disease risk, 2024 Nelson et al. (2024). 2023 Australian guideline for assessing and managing cardiovascular disease risk. <i>Medical Journal of Australia</i> . DOI:10.5694/mja2.52280 | RACGP | Cardiology | “Sex” used once correctly; not defined. Use “women”, “men”. “Gender” not located. | Sex-related prevalence, risk factors, diagnostic & management recommendations. | No gender considerations. | GRADE |

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
|---|---|--|------------------|--|--|---------------------------|--|
| Endocrine Society of Australia | Guidelines for the Management of Thyroid Cancer, 2014 (British guidelines adopted for Australia) Perros et al. (2014). Guidelines for the management of thyroid cancer. <i>Clinical Endocrinology</i> , 81, 1-122. DOI: 10.1111/cen.12515 | Endocrine Society of Australia | Endocrinology | “Gender” used for “sex”. No definitions. | Sex-related risk factors. | No gender considerations. | SIGN 50.4 grading of evidence; consensus |
| Endocrine Society of Australia, Australasian Association of Clinical Biochemists | Harmonisation of Endocrine Dynamic Testing–Adult (HEDTA), 2021 https://endocrinesociety.org.au/guidelines.asp#hedta | Endocrine Society of Australia | Endocrinology | Use “women”, not sex or gender. | Test & diagnosis recommendations for women. | No gender considerations. | No details of method |
| Gastroenterological Society of Australia | Clinical Update for General Practitioners and Physicians: Inflammatory Bowel Disease. Updated 2018; further update in progress. https://nla.gov.au/nla.obj-2712116930/view | Gastroenterological Society of Australia | General practice | Use “women”, “men”, not “sex” or “gender”. | Sex-related diagnosis, testing, routine follow-up. Precautions in relation to pregnancy, breastfeeding, post- menopause. | No gender considerations. | No details of method |

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
|---|--|--|---------------------|---|--|---------------------------|------------------|
| Gastroenterological Society of Australia | Australian consensus recommendations for the management of hepatitis B, 2022 Lubel et al. (2022). Australian consensus recommendations for the management of hepatitis B. <i>Medical Journal of Australia</i> , 216(9), 478-486. DOI:10.5694/mja2.51430. | Endorsed by Hepatitis Australia | Infectious diseases | “Sex” used only for men who have sex with men. “Gender” used once for “sex”. “Women”, “men” used. | Sex related prevalence, risk factors, diagnosis, management. | No gender considerations. | GRADE |
| Gastroenterological Society of Australia | Australian recommendations for the management of hepatitis C virus infection: a consensus statement, 2022 https://www.hepcguidelines.org.au/wp-content/uploads/2022/11/hepatitis-C-virus-infection-a-consensus-statement-2022.pdf | Endorsed by Australasian Hepatology Association, ASHM, Australasian Society for Infectious Diseases, Hepatitis Australia | Infectious diseases | “Sex” used correctly, not defined. “Gender” not located. | Sex-related prevalence. Pregnant women. | No gender considerations. | GRADE |

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
|---------------------------------------|--|---|------------------|--|--|--|-----------------------|
| GP Supervisor Australia | LGBTQIA+ Health and Inclusive Healthcare in General Practice—An Introduction to Teaching and Learning, 2021 https://gpsa.org.au/lgbtqia-inclusive-healthcare/ | Not stated | General practice | Clearly define “sex”, “gender”, “sexual orientation”, including queer, lesbian, gay, non-binary gender, bisexual, agender, asexual, pansexual. | Contraception, reproductive health, alcohol, smoking, safe sex, STIs, cancer, mental health, ageing. | Health of trans, non-binary, gender diverse people. Gender identity & expression. Affirmation, hormone therapy, surgery. Health disparities arising from discrimination, marginalisation, abuse, violence, stigma. | No details of method. |
| Guideline Adaptation Committee | Clinical Practice Guidelines and Principles of Care for People with Dementia, 2016 Guideline Adaptation Committee. (2016). Clinical Practice Guidelines and Principles of Care for People with Dementia. Sydney. Guideline Adaptation Committee. https://cdpc.sydney.edu.au/wp-content/uploads/2019/06/CDPC-Dementia-Guidelines_WEB.pdf | Approved by NHMRC. Endorsed by 8 organisations | Geriatrics | “Sex” (n=1), “gender” (n=2) not defined; used to mean sex. “Women”, “men” used. | Sex-related prevalence. | Should identify needs of people with dementia arising from diversity, including gender (= sex?), sexual orientation. Demands of being a carer; carers usually female. | GRADE |

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
|-----------------------------------|---|---|------------------|--|---|---|-----------------------|
| International PCOS Network | International Evidence-based Guideline for the Assessment and Management of Polycystic Ovary Syndrome, 2023 Teede et al. (2023). <i>International Evidence-based Guideline for the Assessment and Management of Polycystic Ovary Syndrome</i> . Monash University. https://www.monash.edu/medicine/mchri/pcos/guideline | NHMRC | Gynaecology | Terms not defined. “Gender” used for “sex”. Statement about being inclusive, non-binary, gender-neutral. Use “female” for “biological sex”. Use “woman/women” to “encompass all genders” affected by PCOS. | As implied in treatment for PCOS. | Impact of PCOS psychosocially & culturally. | GRADE |
| Kidney Health Australia | Chronic Kidney Disease (CKD) Management in Primary Care: Guidance and clinical tips to help detect, manage and refer patients with CKD in your practice, 5 th edition, 2024 https://kidney.org.au/uploads/resource/s/Chronic-kidney-disease-management-in-primary-care-5th-edition-handbook.pdf | Accepted by RACGP. Endorsed by ANZ Society of Nephrology, Primary Healthcare Nurses Association, Renal Society of Australasia | General practice | “Sex”, “gender”, “men”, “female”, “male” not found in text search. Use only “women”. | Sex-related treatment & management, including care of “women and people with uteruses”. | 1 reference to impact of CKD on “psychosocial wellbeing”. | No details of method. |

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
|--------------------------------|--|---|------------------|---|-------------------------------|---------------------------|-----------------------------------|
| Kidney Health Australia | KHA-CARI guideline: diagnosis and treatment of urinary tract infection in children, 2015 McTaggart et al. (2015). KHA-CARI guideline: diagnosis and treatment of urinary tract infection in children. <i>Nephrology</i> , 20(2), 55-60. DOI:10.1111/nep.12349 | ANZ Society of Nephrology, Kidney Health Australia, Australian Living Evidence Consortium | Nephrology | “Gender”, “sex”, “female” not found in text search. “Girls” & “male” once each, “boys” 3 times. | Treatment appropriate to sex. | No gender considerations. | GRADE (details in online version) |

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
|--|--|--|------------------|--|---|--|------------------|
| Living Evidence for Australian Pregnancy and Postnatal Care (LEAPP) | Australian Living Evidence Collaboration: Australian Pregnancy Care Guidelines, version 2, 2024 https://files.magicapp.org/guideline/3e90d236-01ee-474c-908c-f6f23237552c/published_guideline_8382-2_1.pdf | NHMRC Endorsement from 24 listed organisations. | Obstetrics | “Sex”, “gender” not defined; used correctly. | Preparing women & their partners for childbirth. | Gender inequalities: women’s economic insecurity, primary caregiver, subject to violence. Use preferred pronouns, appropriate gendered language. Consider female health professional for CALD women to ensure cultural safety. Presence of woman’s partner can discourage disclosure of domestic violence. | GRADE |
| Lung Foundation Australia | The COPD-X Plan: Australian and New Zealand Guidelines for the management of Chronic Obstructive Pulmonary Disease, 2023 https://copdx.org.au/ | Endorsed by RACGP | General practice | “Gender” & “sex” used for “sex”. | Sex-related risk factors, comorbidities, treatment effects. | Psychosocial considerations (not linked to gender). | GRADE |

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
|---|---|--|------------------|---|--|---|---|
| Migrant and Refugee Women’s Health Partnership | Guide for Clinicians Working with Interpreters in Healthcare Settings, 2019. https://culturaldiversityhealth.org.au/wp-content/uploads/2019/10/Guide-for-clinicians-working-with-interpreters-in-healthcare-settings-Jan2019.pdf | Accepted by RACGP | General practice | “Sex” not found in text search. “Gender” not defined, used for “sex”. | “Gender-concordance” (=sex) for interpreter, health carer. | Implicit, not explicit, gender awareness. Consider risks of known person/partner as interpreter. | Limited details of method; “evidence-based” |
| Monash University Guideline Development Group | Clinical guideline for the diagnosis and management of work-related mental health conditions in general practice, 2019 https://www.racgp.org.au/FSDE/DEV/media/documents/Clinical%20Resources/Guidelines/Mental%20health/Work-related-mental-health-conditions-in-general-practice.pdf Mazza et al. (2019). <i>Clinical guideline for the diagnosis and management of work-related mental health conditions in general practice</i> . Melbourne: Monash University. | Approved by NHMRC Endorsed by RACGP | General practice | Use “gender,” not defined. “Sex” not found in text search. Use “women”, “men” | Sex-related prevalence & diagnostic management. Sex-related job strain. Sex-attributable depression. Sex-related harmful drinking. | Gender & culture considered. Incorporates Aboriginal & Torres Strait Islander communities; culturally & linguistically diverse populations; LGBTQI+ people. | GRADE + others |

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
|--|---|--|-------------------------------------|---|--|---|---|
| National Aboriginal Community Controlled Health Organisation, Royal Australian College of General Practitioners | National guide to a preventive health assessment for Aboriginal and Torres Strait Islander people, 3 rd edition, 2018 https://www.racgp.org.au/FSDEDEV/media/documents/Clinical%20Resources/Resources/National-guide-3rd-ed-Sept-2018-web.pdf | Endorsed by NACCHO, RACGP. Sponsored by Australian Government Department of Health | General practice, Aboriginal health | No definitions. “Gender” used for “sex”. Acknowledge transgender. | Sex-related risk factors & management recommendations for preventive health in obesity, smoking, alcohol use, physical activity. Precautions in relation to pregnancy, post-menopause. | Psychosocial assessment for adolescent girls & boys in home environment, education, nutrition, activities, drugs, sexuality, suicide, depression, safety. | NHMRC levels of evidence; “evidence-based”. |
| National Asthma Council | Australian Asthma Handbook, 2022 https://www.asthmahandbook.org.au/ | Endorsed by RACGP & others | General practice | No definitions. Adolescent “girls” & “boys” used. | Sex-related risk factors in adolescents. | “Psychosocial factors” considered. | GRADE |
| National COVID-19 Clinical Evidence Taskforce | Australian guidelines for the clinical care of people with COVID-19, 2020 https://files.magicapp.org/guideline/5385329d-4e37-43d4-aa99-3ae393bfa59f/published_guideline_5360-40_0.pdf | NHMRC approval being sought | Infectious diseases | Not defined. “Gender identity” used; avoid binary assumptions. “Sex” not found in text search; “female”, “male”, “women”, “men” used. | Sex differences in research results. | Gender aware but not explicit. | GRADE |

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
|---|--|--------------------------|---------------------|--|--|---------------------------|--|
| National Diabetes Services Scheme | Clinical guiding principles for sick day management of adults with type 1 and type 2 diabetes, 2020 https://www.adea.com.au/wp-content/uploads/2020/09/Sickdays_12.pdf | Not stated | Endocrinology | “Gender”, “sex”, “female”, “male”, “men” not found in text search. “Women” used. | Care of pregnant women. | No gender considerations. | Limited details of method. “Evidence-based best practice” |
| National Health and Medical Research Council (NHMRC) | Ethical guidelines for organ transplantation from deceased donors, 2016 https://www.nhmrc.gov.au/about-us/publications/ethical-guidelines-organ-transplantation-deceased-donors | NHMRC | Ethics | No definitions. “Sex”, “female”, “male” not found in text search. “Gender” used for “sex”. “Woman”, “man” used in case studies. | Women’s experience of being an organ recipient. “Gender” (sex) should be considered to prevent discrimination against potential recipients. | No gender considerations. | No details of method. |
| National Health and Medical Research Council (NHMRC) | Australian Guidelines for Prevention and Control of Infection in Healthcare, 2024 https://www.safetyandquality.gov.au/sites/default/files/2024-01/australian_guidelines_for_the_prevention_and_control_of_infection_in_healthcare_current_version_v11.22_9_january_2024.pdf | NHMRC | Infectious diseases | No definitions. “Gender” used once to mean “sex”. “Sex” used twice for epidemiological data. “Women” found once. “Female”, “male” not found. | No sex-related data or information, apart from caution for pregnant women. | No gender considerations. | GRADE |

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
|---|---|--|------------------|---|--|------------------------------------|------------------|
| National Health and Medical Research Council (NHMRC) | Australian guidelines to reduce health risks from drinking alcohol, 2020 https://www.nhmrc.gov.au/about-us/publications/australian-guidelines-reduce-health-risks-drinking-alcohol#block-views-block-file-attachments-content-block-1 | NHMRC | General | “Gender” not found in text search. “Sex” used accurately, undefined. | Sex-related prevalence, risk factors, management, treatment recommendations. Precautions in relation to pregnancy & breastfeeding. | No specific gender considerations. | GRADE |
| National Heart Foundation of Australia | Guideline for diagnosis and management hypertension in adults, 2016 01_Hypertension-guideline-2016_WEB.pdf (contentstack.io) Gabb et al. (2016). Guideline for the diagnosis and management of hypertension in adults—2016. <i>Medical Journal of Australia</i> , 205(2), 85-89. DOI:10.5694/mja16.00526 | National Heart Foundation of Australia | Cardiology | “Gender”, “sex”, “women”, “men”, “female”, “male” not found in text search of MJA article. “Sex” found once in online version. “Women”, “men”, “female”, “male” identified in online version. | Online only: Sex-related risk factors, diagnosis, treatment. Precautions in relation to pregnant women | No gender considerations. | GRADE |

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
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| National Heart Foundation of Australia Cardiac Society of Australia & New Zealand | <p>Australian Clinical Guidelines for the Diagnosis and Management of Atrial Fibrillation, 2018</p> <p>Brieger et al. (2018). National Heart Foundation of Australia and Cardiac Society of Australia and New Zealand: Australian clinical guidelines for the diagnosis and management of atrial fibrillation <i>Heart, Lung and Circulation</i>, 27, 1209–1266. DOI:10.1016/j.hlc.2018.06.1043</p> <p><i>Summary:</i> Brieger et al. (2018). National Heart Foundation of Australia and Cardiac Society of Australia and New Zealand: Australian clinical guidelines for the diagnosis and management of atrial fibrillation. <i>Medical Journal of Australia</i>, 209(8), 356-362. DOI: 10.5694/mja18.00646</p> | Australian College of Nursing, Australian College of Rural & Remote Medicine, Australian Commission on Quality & Safety in Health Care, ANZ Society of Cardiac & Thoracic Surgeons, Stroke Foundation | Cardiology | <p>“Gender”, “men” not found in text search (full version).</p> <p>“Sex” found 3 times, each with “female”, undefined, “women” once.</p> | Sex-related risk factors, treatment recommendations. | No gender considerations. | GRADE |

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
|---|---|---|------------------|---|---|---------------------------|------------------|
| National Heart Foundation of Australia, Cardiac Society of Australia and New Zealand | Australian Clinical Guidelines for the Management of Acute Coronary Syndromes, 2016 Chew et al. (2016). National Heart Foundation of Australia and Cardiac Society of Australia and New Zealand: Australian clinical guidelines for the management of acute coronary syndromes. <i>Medical Journal of Australia</i> , 205(3), 128-133. DOI: 10.5694/mja16.00368 | National Heart Foundation of Australia, Cardiac Society of Australia and New Zealand | Cardiology | “Gender”, “sex”, “women”, “men”, “female”, “male” not found in text search. | No sex considerations. | No gender considerations. | GRADE |
| National Heart Foundation of Australia, Cardiac Society of Australia and New Zealand | Guidelines for the Prevention, Detection, and Management of Heart Failure in Australia, 2018 Atherton et al. (2018). National Heart Foundation of Australia and Cardiac Society of Australia and New Zealand: guidelines for the prevention, detection, and management of heart failure in Australia. <i>Heart, Lung and Circulation</i> , 27(10), 1123-1208. DOI: 10.1016/j.hlc.2018.06.1042 | Australian College of Nursing, Australian College of Rural & Remote Medicine, Australian Commission on Safety & Quality on Health Care, ANZ Society of Cardiac & Thoracic Surgeons. | Cardiology | “Female gender” (=sex) found once. Use “women”, “men”. | Sex-related risk factors, diagnosis, treatment recommendations. Precautions in relation to Indigenous pregnant women. | No gender considerations. | GRADE |

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
|--|--|---|------------------|--|--|--|------------------|
| Phoenix Australia | Australian Guidelines for the Prevention and Treatment of Acute Stress Disorder, Posttraumatic Stress Disorder and Complex PTSD, 2021 https://www.phoenixaustralia.org/australian-guidelines-for-ptsd/ | Approved by NHMRC Endorsed by RANZ College of Psychiatrists, Royal Australian College of General Practitioners, Australian Psychological Society | Psychiatry | No definitions. “Sex” & “gender” used interchangeably. | Sex-related prevalence, risk factors. Sex of practitioner to be considered in working with survivors of sexual assault. Recommend particular intervention, treatment, management for women who are First Nations, refugees, migrants, experiencing interpersonal violence. | Consider cultural factors in who should provide treatment: age, seniority, gender (= sex & gender?). | GRADE |
| Rheumatic Heart Disease (RHD) Australia | The 2020 Australian guideline for prevention, diagnosis and management of acute rheumatic fever and rheumatic heart disease (edition 3.2), 2022 https://www.rhdaustralia.org.au/system/files/fileuploads/arf_rhd_guidelines_3.2_edition_march_2022.pdf | Endorsed by 24 national organisations. | Cardiology | No definitions. “Sex” & “gender” both used for “sex”. | Sex-related prevalence, risk factors, diagnosis, management, recommendations. Precautions in relation to pregnancy, breastfeeding. Focus on women & girls. | Cultural but not gender considerations. | GRADE |

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
|---|--|--------------------------|------------------|--|---|--|--|
| Royal Australian and New Zealand College of Obstetricians and Gynaecologists | Endometriosis clinical practice guideline, 2021 https://ranzco.edu.au/resources/endometriosis-clinical-practice-guideline/ | RANZCOG | Gynaecology | “Gender” identified once: Target population includes “gender diverse” people, not defined. “Women” occurs frequently. “Sex”, “men”, “female”, “male” not found in text search. | Implicit in biological condition; emphasise “people”. | Gender aware. Psychosocial aspects considered. | GRADE |
| Royal Australian and New Zealand College of Ophthalmologists | Clinical Practice Guidelines for the Collaborative Care of glaucoma patients and suspects by ophthalmologists and optometrists in Australia, 2019 https://ranzco.edu.au/wp-content/uploads/2018/11/Guidelines-for-the-Collaborative-Care-of-Glaucoma-Patients.pdf | Approved by RANZCO Board | Ophthalmology | “Gender”, “sex”, “women”, “men”, “female”, “male” not identified in text search. | No sex-related data or information. | No gender considerations. | Limited details of method. Based on UK assessment of evidence. |

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
|--|--|--------------------------|------------------|--|---|---|--|
| Royal Australian and New Zealand College of Psychiatrists | Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines for the treatment of panic disorder, social anxiety disorder and generalised anxiety disorder, 2018 Andrews et al. (2018). Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines for the treatment of panic disorder, social anxiety disorder and generalised anxiety disorder. <i>ANZJ Psychiatr</i> , 52(12):1109-1172. DOI:10.1177/0004867418799453 | Approved by RANZCP Board | Psychiatry | “Gender” used (once) to mean “sex”. “Sex” not identified in text search. “Women”, “men” used throughout. | Sex-related prevalence, diagnosis, treatment recommendations. Consideration for special populations including perinatal women. | No gender considerations. | NHMRC levels of evidence; “evidence-based”, “consensus-based”. |
| Royal Australian and New Zealand College of Psychiatrists | The 2020 Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines for mood disorders, 2021 Malhi et al. (2021). The 2020 Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines for mood disorders. <i>ANZJ Psychiatr</i> , 55(1):7-117. doi:10.1177/0004867420979353 | RANZCP | Psychiatry | No definitions. “Gender” used for “sex”. “Women, “men” used throughout. | Sex-related prevalence, diagnosis, treatment recommendations. Considerations for special populations including pregnant women. Some patients may be better assessed & treated by clinician of same sex. | Gender considerations implied: circumstances of women with postpartum depression. | “Evidence-based”, “consensus-based”. |

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
|--|---|--------------------------------------|------------------|--|---|----------------------------|---|
| Royal Australian and New Zealand College of Psychiatrists | RANZCP clinical practice guideline for the management of deliberate self-harm, 2016 Carter et al. (2016). Royal Australian and New Zealand College of Psychiatrists clinical practice guideline for the management of deliberate self-harm. <i>ANZ Journal of Psychiatry</i> , 50(10), 939-1000. DOI:10.1177/0004867416661039 | RANZCP Board | Psychiatry | “Gender” used for sex & applied to “Māori gender and social roles”. “Sex” used (once) appropriately. No definitions. “Women”, “men”, “female”, “male” used throughout. | Protective & risk factors of sex. | Implicit but not explicit. | NHMRC levels of evidence; “consensus-based”. |
| Royal Australian and New Zealand College of Radiologists | Guideline for Imaging of Suspected Non-Accidental Injury, 2022 https://www.ranzcr.com/component/edocman/guideline-for-imaging-of-suspected-non-accidental-injury/viewdocument/1831?Itemid=424 | RANZCR | Radiology | “Gender”, “sex”, “female”, “male” not identified in text search. About children. | No sex-related data or information. | No gender considerations. | No details of method; “evidence based”. |
| Royal Australian and New Zealand College of Radiologists | MRI Safety Guidelines, version 3.0, 2021 https://www.ranzcr.com/college/document-library/mri-safety-guidelines | RANZCR Faculty of Clinical Radiology | Radiology | “Gender”, “men”, “female”, “male” not found in text search. “Sex” used once, appropriately. “Women” used once with “pregnant”. | Limited sex-related risk factor & management. | No gender considerations. | No details of method. “Evidence-based culture”. |

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
|---|---|--------------------------|------------------|---|---|---|---|
| Royal Australian College of General Practitioners (RACGP) | Smoking, nutrition, alcohol, physical activity (SNAP), 2 nd edition, 2015 https://www.racgp.org.au/clinical-resources/clinical-guidelines/key-racgp-guidelines/view-all-racgp-guidelines/snap | RACGP | General practice | No definitions. “Gender used (once) for “sex”. “Sex” used once. “Women”, “men” used. | Sex-related risk factors in smoking, overweight, nutrition, alcohol, physical activities, information management in clinic or organisation. | Implied gender considerations: Socioeconomically disadvantaged women. | Limited details of method. NHMRC levels of evidence. |
| Royal Australian College of General Practitioners (RACGP) | Osteoporosis prevention, diagnosis and management in postmenopausal women and men over 50 years of age, 2024 https://healthybonesaustralia.org.au/wp-content/uploads/2024/03/hba-racgp-guidelines-2024.pdf | Endorsed by RACGP Board | General practice | No definitions. “Gender” used (once) for “sex”. “Sex”, “women”, “men” used throughout. | Sex-related prevalence, risk factors, prevention, treatment recommendations. | No gender considerations. | Limited details of method. NHMRC levels of evidence. Consensus implied. |
| Royal Australian College of General Practitioners (RACGP) | e-Mental health: A guide for GPs, 2018 https://www.racgp.org.au/clinical-resources/clinical-guidelines/guidelines-by-topic/mental-health-1/e-mental-health | RACGP | General practice | “Gender”, “sex”, “woman”, “man”, “female”, “male” not identified in text search. | No sex-related data or information. | No gender considerations. | No details of method |

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
|--|---|---------------------------|------------------|---|---|--|--|
| Royal Australian College of General Practitioners (RACGP) | Guideline for the management of knee and hip osteoarthritis, 2 nd edition, 2018 https://www.racgp.org.au/getattachment/71ab5b77-afdf-4b01-90c3-04f61a910be6/Guideline-for-the-management-of-knee-and-hip-osteoarthritis.aspx | NHMRC | General practice | No definitions. “Gender” used (twice) for “sex”. “Sex” not found in text search. “Women”, “men” used. | Sex-related prevalence, risk factors, diagnosis. | No gender considerations. | GRADE |
| Royal Australian College of General Practitioners (RACGP) | Management of type 2 diabetes: A handbook for general practice, 2020 https://www.racgp.org.au/getattachment/41fee8dc-7f97-4f87-9d90-b7af337af778/Management-of-type-2-diabetes-A-handbook-for-general-practice.aspx | RACGP, Diabetes Australia | General practice | No definitions. “Gender” used once to mean “sex”. “Sex” not found in text search. “Women”, “men”, “female”, “male” used. | Sex-related diagnosis, management, risk factors, recommendations. | “Psychosocial” factors discussed, not explicitly gender-aware. | Minimal details of method; used NHMRC, USA, Canadian levels of evidence. |

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
|--|---|--------------------------|------------------|---|--|--|--|
| Royal Australian College of General Practitioners (RACGP) | Prescribing drugs of dependence in general practice, Part A Clinical governance framework, 2015 (updated 2019); Part B Benzodiazepines, 2015 (updated 2019) https://www.racgp.org.au/getattachment/b1dc3adb-e3bc-4e0d-a872-8b53e7b59aee/Part-A.aspx https://www.racgp.org.au/getattachment/1beeb924-cf7b-4de4-911e-f7dda3e3f6e9/Part-B.aspx | RACGP | General practice | Part A: “Gender”, “female” not found in text search. “Sexes” found once. “Women”, “men” used occasionally. Part B: “Gender”, “female” each found once, meaning sex. “Sex” not found in text search. “Women”, “men” used. | Sex-related prevalence, pharmaceutical misuse, risk factors, management recommendations. Precautions about pregnant women. | No explicit gender considerations. | Limited details of method; NHMRC levels of evidence. |
| Royal Australian College of General Practitioners (RACGP) | Guidelines for preventive activities in general practice, 9 th edition. Updated 2021 https://www.racgp.org.au/getattachment/1ad1a26f-9c8b-4e3c-b45b-3237272b3a04/Guidelines-for-preventive-activities-in-general-practice.aspx | NHMRC | General practice | No definitions. “Gender” used twice: gender-based violence. “Sex” not found in text search. “Female”, “male”, “women”, “men” used. | Sex-related prevalence, risk factors, preventive measures, management. | GPs’ important role in identifying psychosocial factors, particularly women experiencing intimate partner violence, postpartum depression. Consideration of cultural & linguistic diversity. | AGREE tool. NHMRC levels of evidence |

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
|---|---|--------------------------|------------------|--|--|---|--|
| Royal Australian College of General Practitioners (RACGP) | Supporting smoking cessation: A guide for health professionals. Updated 2024 https://www.racgp.org.au/clinical-resources/clinical-guidelines/key-racgp-guidelines/view-all-racgp-guidelines/supporting-smoking-cessation | RACGP | General practice | “Gender” not found in text search; 2 references to care of people who are transgender. “Sex” found once. Use “women”, “men”. | Sex-related risk factors, treatment, recommendations. | No explicit gender considerations; psychosocial & cultural awareness. | GRADE |
| Royal Australian College of General Practitioners (RACGP) | First do no harm: A guide to choosing wisely in general practice, 2022 https://www.racgp.org.au/clinical-resources/clinical-guidelines/key-racgp-guidelines/view-all-racgp-guidelines/first-do-no-harm/about-first-do-no-harm/ | RACGP | General practice | “Gender”, “sex” not identified in text search; use only “women”. | “Women” mentioned in relation to management of thyroid test. | No gender considerations. | Limited details of method; “evidence-based”, consultation process. |
| Royal Australian College of General Practitioners (RACGP) | Abuse and violence - Working with our patients in general practice, 2022 https://www.racgp.org.au/getattachment/4ab6102c-67d9-4440-9398-a3ae759164ef/Abuse-and-violence-Working-with-our-patients-in-general-practice.aspx | RACGP | General practice | “Gender” not defined but used appropriately. “Women”, “men” throughout. “Sex” not identified in text search. | Implicit. | Clarify root causes of violence: gendered discrimination, social/gender norms that condone violence, unequal power between women & men. | GRADE |

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
|--|---|-----------------------------------|---------------------|--|--|---|----------------------|
| Royal Australian College of General Practitioners (RACGP) | RACGP aged care clinical guide (Silver Book), 5 th edition, 2023 https://www.racgp.org.au/silver-book | RACGP | General practice | “Gender” used for “sex”. “Sex” used appropriately. “Women, “men” used. | Sex-related risk factors & management. | Health matters & risk factors of LGBTQI people. | Consensus. |
| Royal Australian College of General Practitioners (RACGP), Australian Diabetes Society | Emergency management of hyperglycaemia in primary care, 2018 https://www.racgp.org.au/FSDEDEV/media/documents/Clinical%20Resources/Guidelines/Management-of-hyperglycaemia.pdf | RACGP Australian Diabetes Society | General practice | “Gender”, “sex”, “female”, “male”, “women”, “men”, “female”, “male” not identified in text search. | No sex-related data or information. | No gender considerations. | No details of method |

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
|--------------------------|---|--------------------------|------------------|---|--------------------------------|--|------------------|
| Stroke Foundation | Living Clinical Guidelines for Stroke management, 2023. (8 separate chapters) http://infromme.org.au/guidelines/living-clinical-guidelines-for-stroke-management | NHMRC & others | Neurology | “Gender”, “sex”, “women”, “men”, “female”, “male” not found in text search of ch 1. Ch 2: “Sex” (n=2) used appropriately. Ch 3: “Sex” used appropriately; “women” used (once) for caregiver burnout. Ch 4: “Sex” used (x1) appropriately. “Women”, “men” used throughout. Ch 5: “Gender” used (x1) for “sex”. “Sex” (x1) with “female”. Ch 6: “Gender” used (x1), undefined, “sex” (x1), “women” throughout. Ch 7: Not found. Ch 8: “Gender” (x1) for “sex”, “female” (x1). | Sex-related risks & treatment. | Limited gender considerations. Ch 6: “The psychological, physical, cultural/gender and other diversity implications of treatment options should be discussed thoroughly before implementation, ensuring informed consent is obtained.” | GRADE |

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
|--|---|---|---------------------|---|---------------------------------|----------------------------|----------------------|
| Thoracic Society of Australia and New Zealand | <p>Thoracic Society of Australia and New Zealand (TSANZ) position statement on chronic suppurative lung disease and bronchiectasis in children, adolescents and adults in Australia and New Zealand, 2023</p> <p>Chang et al. (2023). Thoracic Society of Australia and New Zealand (TSANZ) position statement on chronic suppurative lung disease and bronchiectasis in children, adolescents and adults in Australia and New Zealand. <i>Respirology</i>, 28(4): 339–349. DOI: 10.1111/resp.14479</p> | Thoracic Society of Australia and New Zealand | Thoracic medicine | “Gender”, “sex”, “female” not identified in text search. “Women”, “men” (once each); “male” twice with “infertility”. | Limited sex-related prevalence. | No gender considerations. | No details of method |

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
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| Thrombosis and Haemostasis Society of Australia and New Zealand | New guidelines from the Thrombosis and Haemostasis Society of Australia and New Zealand for the diagnosis and management of venous thromboembolism, 2019 Tran et al. (2019). New guidelines from the Thrombosis and Haemostasis Society of Australia and New Zealand for the diagnosis and management of venous thromboembolism. <i>Med J Aust</i> , 210: 227-235. DOI: 10.5694/mja2.50004 | Thrombosis and Haemostasis Society of Australia and New Zealand | Haematology | “Gender”, “female” not found in text search. “Sex” used twice with “male”, “women” used twice with “pregnant”. | Limited sex-related risk factors. | No gender considerations. | GRADE, NHMRC levels of evidence. |
| Transplantation Society of Australia & New Zealand (TSANZ) | Clinical Guidelines for Organ Transplantation from Deceased Donors, 2023 https://tsanz.com.au/storage/documents/TSANZ Clinical Guidelines Version-111_13062023Final-Version.pdf | Transplantation Society of Australia and New Zealand | Organ transplantation | No definitions. “Gender” used for “sex”. “Sex” & variants mostly = sexual intercourse. “Sex” (occasionally) used accurately. “Women”, “female”, “male” used. | Sex-related eligibility & risk factors, donors & recipients. | Unlawful to discriminate by sexual orientation. | No details of method. Based on NHMRC ethical guidelines. |

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
|--|---|--------------------------|------------------|--|----------------------------------|---------------------------|---------------------------------------|
| University of Melbourne: Dementia Training Australia, National Aboriginal Community Controlled Health Organisation (NACCHO) | <p>Best-practice guide to cognitive impairment and dementia care for Aboriginal and Torres Strait Islander people attending primary care, 2022</p> <p>https://www.racgp.org.au/getattachment/b5e33105-dde0-474d-83c3-ef5d80e09634/Best-practice-guide-to-cognitive-impairment-and-dementia-care-for-Aboriginal-and-Torres-Strait-Islander-people-attending-primary-care.pdf</p> <p>Belfrage M, et al. (2022). <i>Best-practice guide to cognitive impairment and dementia care for Aboriginal and Torres Strait Islander people attending primary care</i>, Version 1.2.4, Melbourne, Dementia Training Australia</p> | RACGP, NACCHO | General practice | “Gender”, “sex”, “women”, “men”, “female” not identified in text search. “Males” used once. “Psychosocial” matters considered. | Limited sex-related information. | No gender considerations. | Limited details of method; consensus. |

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
|--|--|--------------------------|---------------------|--|---------------------------------------|---|--|
| University of Sydney: Specialty of Addiction Medicine | <p>Guidelines for the Treatment of Alcohol Problems, 2021</p> <p>https://alcoholtreatmentguidelines.com.au/pdf/guidelines-for-the-treatment-of-alcohol-problems.pdf</p> <p>Haber & Riordan (2021). <i>Guidelines for the Treatment of Alcohol Problems</i> (4th edition). Sydney: Specialty of Addiction Medicine, Faculty of Medicine and Health, The University of Sydney</p> | Not stated. | Addiction medicine | “Gender” used appropriately, including in two gender-focused chapters; also used to mean “sex”. “Sex” used occasionally. “Gender” discussed rather than defined. | Sex related prevalence, risk factors. | Gender-specific matters: e.g., gender roles, experience of alcohol consumption, domestic violence, contraception. Gender-diverse people considered. | Minimal details of method; NHMRC levels of evidence. |

| Organisation | Title of guideline, year of publication URL/citation | Approved/ endorsed by | Area of practice | Use terms “sex” or “gender”? Correctly define & use? | Incorporation of sex | Incorporation of gender | GRADE or similar |
|---|--|--------------------------|--------------------|---|-----------------------|---|--|
| Victoria State Government Department of Health | Alcohol and other drugs program guidelines, 2018, reviewed 2023 Part 1, overview; part 2, program & service specifications; part 3, quality, reporting and performance management. https://www.health.vic.gov.au/aod-service-standards-guidelines/alcohol-and-other-drug-program-guidelines | Victorian Government | Addiction medicine | Part 1: “Gender” used x1: “gender-diverse”, not defined. “Sex”, “women”, “men”, “female”, “male” not found in text search. Part 2: “Gender” used for “sex”; 1 use each of “gender sensitive”, “gender circumstances”. Specialist services for women named. “Sex”, “men”, “female”, “male” not found in text search. Part 3: “Gender”, “sex” (undefined) in relation to LGBTQI people (“sex and gender non-conforming”). “Female”, “male”, women”, “men” not found in text search. | Prevalence, services. | Women’s & mother’s needs discussed. Implicit gender awareness. | No details of method; “evidence-informed”. |

