



WOMEN AND NON-COMMUNICABLE DISEASES (CHRONIC CONDITIONS)

Report 2014

Australian Women's Health Network

Women and Non-Communicable Diseases

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PO Box 188, Drysdale, Victoria 3222

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Understanding the ways in which gender impacts on chronic health conditions will be enhanced by explicitly mainstreaming gender ... it is vital to infuse gender analysis, gender sensitive research, women's perspectives and gender equity goals into policies, projects and institutional ways of working.

(AWHN 2012 p 5).

Executive summary

Non-communicable diseases (cancer, cardiovascular disease, diabetes, chronic respiratory conditions, and musculo-skeletal conditions) are the number one cause of death and disablement for women and men globally and in Australia, with increasing recognition that women and men experience those conditions differently. This position paper examines the gender dimensions of those diseases to raise awareness, and to inform prevention and treatment guidelines. Building on the inequities for women documented in the AWHN Position Paper on Women's Health and Wellbeing, this paper highlights the specific areas where gender blindness is occurring and the areas where change is needed.

Despite the prevalence of Non-communicable diseases (NCDs) among women, there has been little emphasis and even less action, on the differences that women experience in these diseases. Most guidelines and policies on NCDs are gender neutral. This has meant that women with non-communicable diseases have not received the level of support and services needed to ensure the best possible outcomes or that necessary research and education into gender differences has been funded.

The lack of research into gender differences and the consequent lack of education for health providers and the population generally, potentially promotes poorer outcomes for women and increases gender inequities. When there is mounting evidence that women's experience of NCDs is different to that of men's experience, the gender neutrality of policies, research and education programs contributes to gender inequities.

The impact of NCDs on women's lives, the differences in risk factors for women than for men and the social determinants of NCDs are highlighted. Specific risks include, that:

- Lung cancer is responsible for more women's deaths than breast cancer although more women are diagnosed with breast cancer than lung cancer

- Mortality rates from lung cancer in women are continuing to rise while they have plateaued or are dropping among men
- Chronic Obstructive Pulmonary Disease (COPD) occurs at lower levels of exposure to tobacco smoking in women than men
- women with diabetes have a higher risk of stroke than their male counterparts
- women with diabetes have poorer survival after stroke than men.

This paper also highlights the low rate of women in research trials and the low levels of reporting of sex-disaggregated findings. These indicate that treatment recommendations are more generalisable for males than females and the research benefits are therefore greater for men. In turn, this accords a lower status in research to women's health.

Failure to act on gender differences in non-communicable disease costs lives. It is no longer satisfactory for prevention and treatment guidelines to remain gender neutral. Leadership from governments and peak health bodies is required to drive change in both policy and research. Understanding the ways in which gender interacts with NCDs will be enhanced by explicitly mainstreaming gender in policy, research, treatment guidelines and professional and public education. This paper recommends actions that can be taken to redress these problems, and achieve gender aware, gender sensitive and gender transformative care for women.

Recommendations

To improve the prevention, diagnosis and treatment of non-communicable disease (chronic conditions) for women AWHN recommends:

1. The National Health and Medical Research Council issue a guideline for the equal inclusion of women and the evaluation of gender differences in clinical trials to ensure that the safety and efficacy of therapies are adequately investigated in the full range of patients who would use the therapy.
2. Continued research through for example, the Heart Foundation and Diabetes Australia which fund research programs, is needed to explore the causes of the sex difference in non-communicable diseases (NCDs) in women in order to establish the evidence base about women's experiences and symptom patterns as well as treatments to improve health care for women (Peters 2014). This evidence will inform the development of gender-informed guidelines on primary and secondary prevention of NCDs. For example, Pilote (2007) has put forward research questions which require attention:
 - Why is the risk of death for women with diabetes greater than it is for men with diabetes (Pilote 2007)?
 - Why are women with atrial fibrillation at greater risk of stroke than men with atrial fibrillation (Pilote 2007)?
 - Why do women present with different coronary symptoms than men (Pilote 2007).
3. Peak health bodies which are funded to develop clinical guidelines for NCDs have a responsibility to move beyond the gender neutrality position they have adopted and address the gender differences in health experiences, treatment, drug efficacy and health outcomes. The knowledge that women with diabetes have a higher risk of cardiovascular disease (CVD), particularly stroke, should be built into clinical guidelines immediately.
4. The Federal Government ensures that peak bodies develop gender sensitive guidelines and makes this a condition of funding of peak bodies. Guidelines are necessary to assist clinicians (medical and allied health) to assess risk and recognise gender differences (Betihavas, Davidson, Newton et al 2012). Gender training based on guidelines are needed in speciality training of medical doctors to equip them with the skills needed for effective care of women and men, and to enhance their health literacy about gender differences. When counselling their clients clinicians need to ensure that both men and women have the help they need to successfully manage their NCDs (Wong, Gucciardi, Grace 2005, Yeats 2010).
5. Federal, State and Territory Governments rewrite all current gender neutral policies so that they identify gender differences and what needs to happen for gender equity to be achieved. This will demonstrate good stewardship, improve the visibility of gender differences in policy documents about NCDs and achieve better health outcomes for women.
6. Provision of integrated women's health services which are comprehensive, holistic and incorporate a life-span gender- sensitive approach would overcome the current fragmented approach to primary and secondary prevention for women with, or at higher risk of, NCD's. Prioritising action on this should be taken in population health planning.
7. Federal Government funding is allocated through the primary care sector to develop gender-specific screening for pre-diabetes in women and increase screening coverage of women for diabetes to improve the effectiveness of the prevention of CVD events including stroke.
8. Diabetes peak bodies and the primary health care research and development program (i.e. Primary Health Care Research & Information Service and Australian Primary Health Care Research Institute) develop gender-specific screening for pre-diabetes in women to address their different experience of diabetes related diseases to that of men.

9. Peak bodies for NCDs use the Gender-responsive Assessment Scale (WHO 2010) to assess the extent to which their policies and programs recognise and integrate gender dimensions of NCDs, and then plan to redress the gaps highlighted by the application of the Scale.
10. Key primary health organisations be identified to give priority to taking action:
 - on improving access to publicly funded (and therefore affordable) gender-sensitive chronic disease management services, and
 - for increasing women's health literacy about NCDs through multilevel interventions targeted at individuals, organisations, general community and health practitioners. This includes prevention and health promotion programs to raise awareness of acute coronary disease differences in women.

Definitions

CVD: Cardiovascular disease are diseases of the heart (cardio) and blood vessels (vascular) and includes coronary heart disease (CHD heart attack and angina), stroke, and heart failure.

DALYs: Disability Adjusted Life Years which is the sum of years of potential healthy life lost due to premature death and the years of productive life lost due to illness, injury or disability. This is the basis unit used in burden of disease or injury estimates.

Equity: the equally fair treatment of women and men, including recognition that women and men have different needs, preferences and interests and that equality of outcomes is dependent on recognition of the power differentials that operate in every society.

Gender: the economic, social and cultural attributes and opportunities ascribed to being female or male.

Gender equity: The concept of gender equity recognises that men and women have different life experiences, different needs, different levels of power and access to decision-making in our society, differing expectations by others and different ways of expressing illness. Gender equity strategies recognise that gender leads to different opportunities for women and men (NSW Health 2000).

Gender health equity: Fair distribution of the social, economic and political determinants of health between women and men.

Incidence: the rate at which new cases of a condition occur in a population during a specified period.

Non-communicable diseases (NCDs):

Non-communicable diseases, also known as chronic conditions/diseases, are a group of conditions including cardiovascular diseases, cancer, mental health problems, diabetes mellitus, chronic respiratory disease including asthma, chronic kidney disease, and musculoskeletal conditions. These disorders are largely preventable and are linked by common risk factors, underlying determinants, and opportunities for intervention. Most NCDs require long periods of care and treatment.

Prevalence: the proportion of a population that is affected by a disease at a specific time, usually expressed as a percentage.

Primary prevention: aims to prevent a disease or condition from occurring by taking proactive or prophylactic strategies to prevent health problems before they arise.

Risk factors for NCDs: the four most common preventable risk factors for NCDs (for both women and men) are unhealthy diet, physical inactivity, tobacco smoking, and the harmful use of alcohol that lead to the key metabolic/physiological changes (raised blood pressure, overweight/obesity, raised blood glucose and raised cholesterol) (WHO 2014).

Secondary prevention: aims to find, treat and manage disease early and to cure the disease if possible. Secondary prevention is focused on early diagnosis, appropriate referral, and rapid initiation of treatment to stop the progress of disease processes.

Social determinants of health: Social, economic, and political resources and structures that influence health outcomes including the material conditions of daily living: income, education, employment, gender, health care, culture, food security, social support and social exclusion and psychosocial dimensions of having control over one's life and decisions that affect it.

Social gradient: In general, the lower an individual's socioeconomic position, the worse their health; the social gradient in health runs from top to bottom of the socioeconomic spectrum.

Introduction

Women are affected by non-communicable diseases (NCDs) in different ways to men. Not only are women's experiences of NCDs influenced by the social conditions of women's lives which are different to those of men, NCDs often manifest differently in women than they do in men. Moreover, women experience a higher burden from chronic disease and live more years of life with a disability from chronic disease than do men (AMA 2014; AIHW 2012c). The purpose of this paper is to stimulate policy dialogue on the particular issues related to women and NCDs, to strengthen gender analysis in policy and programs, and strengthen the focus on gender in clinical guidelines and particularly, the equitable inclusion of gender analysis in research which is needed to inform guideline development.

Women's quality of life is affected by experiences and disadvantages that are distinctly gendered. Indeed, gendered stereotypes are embedded in health systems and care practices (NSW Health 2000) so research, policies and programs will be less effective if they assume a gender neutral position. Gender is an array of socially constructed roles and relationships, predispositions, attitudes, behaviours, values, relative power and influence that are socially ascribed to the two sexes on a differential basis. Gender is historically and culturally specific; it varies from society to society, and from time to time within a given society. Established gender norms and values in Australia mean that women typically have fewer resources than men (income, housing, employment) and have less power and influence. Equality for women means equal power in economic, political, health and educational spheres, while equity for women calls for recognition of their different needs in order to reach equality of outcomes.

The significance of gender equity and gender inequities for women's health has been recognised internationally. Gender equity is a basic principle of the United Nations (UN) set out in the Preamble to the Charter of the United Nations; reaffirmed in the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) in 1979. The Programme of Action of the International Conference on Population and Development (ICPD) in Cairo 1994 and the Beijing

Platform for Action in 1995 recognise the significance of gender inequities for women's health. This has been further noted in the outcomes of other major United Nations conferences including the World Conference on Human Rights in Vienna in 1993 and the World Summit for Social Development in Copenhagen in 1995. In 1997, the United Nations Economic and Social Council (ECOSOC) adopted a resolution calling on all specialised agencies of the United Nations to mainstream a gender perspective into all their policies and programmes. Then from 2005-08, the WHO Commission on the Social Determinants of Health systematically examined the evidence and identified gender as both a determinant of health and a determinant of health inequities (WHO 2008, 2010).

Gender analysis requires assessment of distinctive patterns in the determinants of health and illness. Gender interacts with the social, economic and biological determinants as well as lifestyle risk factors for NCDs. Gender therefore, creates different health experiences and outcomes for males and females. That said, this paper will only briefly address the social determinants of women's health which were covered in more detail in the AWHN Position Paper on Women and Health and Wellbeing (AWHN 2012a).

Following the WHO (2011), the NCDs included in this paper are cardiovascular disease, chronic respiratory diseases, diabetes (Type 1 and Type 2), and some cancers. In addition, musculoskeletal disorders (MSDs) are included because they are a major cause of pain and mobility impairment. Mental health conditions are sometimes included in typologies of NCDs but will not be covered in this paper as they were addressed in the AWHN Women and Mental Health Position Paper (AWHN 2012c). This paper will review the incidence and prevalence of NCDs among women and factors related to gender that affect systems, health care practices and treatment choices. It will examine where a focus on gender could improve health outcomes in NCDs for women, and make resources available to women according to their needs (NSW Health 2000).

Impact of NCDs on women

NCDs are responsible for 70–80% of the total disease burden for Australians. Morbidity from NCDs is rising even though overall life expectancy is increasing. The ageing demographic, advances in health care and changes in how people live their lives are driving the rise of NCDs. Women represent a growing proportion of the ageing demographic and they experience a higher burden from NCDs.

NCDs impact heavily on women's lives because of social and cultural values about men's experiences as the norm, therefore making women's experiences less visible. This is very apparent in research as well as in the field of NCD prevention, treatment and long term management. NCDs also impact on society due to costs of healthcare and lost productivity. Although women, on average, live longer than men, they are in poor health for many of those years as a result of NCDs. Women's lives are also impacted when NCDs cause illness in family members, because women frequently sacrifice paid work and therefore, personal income and financial security, to provide care for others.

Cancer, cardiovascular disease (CVD), diabetes and chronic respiratory diseases are the world's leading causes of premature death in women and men, but importantly, are responsive to prevention and/or early detection (WHO 2010). Cancer causes the highest burden of all NCDs in terms of Disability Adjusted Life Years (DALYs) (Australian Government 2014). CVD is the biggest cause of premature death for women in Australia (AIHW 2010).

Breast cancer is the leading cancer among women with over 14,000 Australian women diagnosed each year. The five year survival rate is improving (currently about 89%), but about 2,700 women were expected to die from breast cancer in 2013 (AIHW 2012a). While survival rates continue to improve, Aboriginal and Torres Strait Islander women are less likely to be diagnosed in a timely manner (AIHW 2012b).

Even though more women are diagnosed with breast cancer, lung cancer is more deadly. Smoking rates are declining in both men and women, and lung cancer mortality rates in men are starting to fall. However, mortality rates in women are continuing to rise

because smoking rates peaked later among women than men (IARC 2013). Women who smoke have a significantly greater relative risk of lung cancer, that is, women may be more susceptible to the harms of smoking, although these effects may only be among heavy smokers (Huxley, Woodward 2011).

Chronic respiratory conditions develop slowly among smokers, most of whom become addicted in adolescence. The increase in smoking-related diseases in women is resulting in increased death rates from lung cancer and chronic obstructive pulmonary disease (COPD) in women (McKenzie et al 2012). Respiratory disease, caused primarily by cigarette smoking, impairs quality of life and is a major risk factor for CVD.

Other major causes of cancer death for women are gynaecological cancers (those pertaining to the women's reproductive systems including cervical and ovarian cancer), and bowel cancer. GLOBOCAN 2012 emphasises that globally, priority should be given to women's cancer prevention, particularly screening and early detection for breast and cervical cancers (IARC 2013). Even though Australia has nationally funded universally available screening programs for cervical and breast cancer, screening is not taken up by all women. In 2009–2010, the two-year participation rate for the National Cervical Screening Program was 57.4% of women in the target age group. The participation rate rises to 83.3% when measured over 3–5 years (AIHW 2012b). Breast screening programs achieved a participation rate of 55% in 2010–2011 (AIHW 2013). Screening rates are consistent with the social gradient – that is, women on lower rungs of the socio-economic ladder are less likely to participate in screening programs (AIHW 2012c).

CVD is the biggest killer of women - four times as many women die of heart disease than breast cancer (Heart Foundation 2014), accounting for more than one-quarter of premature deaths among women (AIHW 2012b). Further, the absolute number of deaths due to CVD in women is likely to rise in proportion to the ageing population. Heart disease is considered to be premature when it occurs in men under 55 years and in women under 65 years (Heart Foundation 2012b).

Four per cent of Australians have diabetes, and three in five of those also have CVD. Overall, 120,000 people live with type 1 diabetes; 956,000 people live with type 2 diabetes; and 23,600 women develop gestational diabetes mellitus (GDM). 'For every person diagnosed with diabetes there is usually a family member or carer who also 'lives with diabetes' every day in a support role. This means that an estimated 2.2 million Australians are affected by diabetes every day' (Diabetes Australia 2013). Given that 60-70% (depending on the measure) of primary carers are women (Commonwealth Financial Planning 2009), it is therefore, women who carry a disproportionate financial and social burden from diabetes and undoubtedly, other NCDs.

Diabetes in pregnancy, including pre-existing diabetes and GDM, affects 1 in 20 pregnancies (AIHW 2014). GDM impacts on both the mother and the child, potentially predisposing that child to CVD conditions in later life. Indigenous women have higher rates of gestational diabetes than non-Indigenous women. The prevalence of diabetes is increasing among older women due to women's longer life expectancy, and there are also increasing numbers of young women developing type 2 diabetes (Better Health Channel 2014).

It has been known for some years that diabetes increases the risk of heart disease among women to a greater extent than it does for men (Barrett-O'Connor 2007). The evidence is also now convincing that women with diabetes have a higher risk of stroke than their male counterparts, confirming previous findings that women with diabetes have poorer survival after stroke than men (Peters, Huxley and Woodward 2014). The causes of the sex difference require further research in order to improve medical care for women with diabetes but the knowledge about women's risk can and should be built into guidelines immediately.

The most prevalent musculoskeletal disorders are back problems, osteoarthritis, osteoporosis and rheumatoid arthritis (Arthritis and Osteoporosis 2013). Both osteoarthritis and rheumatoid arthritis are more prevalent among women, with 19.9% of women estimated to have some form of arthritis in 2007 compared to 17.1% of men (Arthritis Australia 2007).

Musculoskeletal disorders, such as osteoarthritis are not considered to be preventable while osteoporosis is largely preventable. There is a relationship between some musculoskeletal conditions and obesity and osteoporosis, which in turn, are related to nutrition and physical activity levels (NPHP 2001). Musculoskeletal disorders affect more than a quarter of the population, and frequently present as co-morbidities with depression and with vascular conditions in older people (NPHP 2001). The chronic pain and impairment of mobility associated with MSD impact on women's quality of life and risk of falling and consequent risk of fractures. Women in the Australian Longitudinal Study on Women's Health who reported arthritis had higher health care use and higher Medicare costs in general, with Medicare costs for women with arthritis 31% higher than for those without arthritis (Parkinson, Curryer, Gibberd et al 2013). This means that women are likely to be bearing a high financial impact from treating and managing their arthritis condition with out-of-pocket costs, prescriptions and over-the-counter medications.

Risk factors and Social Determinants of NCDs

Many NCDs are linked to common risk factors of tobacco use, harmful use of alcohol, unhealthy diet, physical inactivity, environmental carcinogens and low health literacy (AWHN 2012a). All risk factors are highest among the most disadvantaged groups in Australian society. Chronic disease in adulthood is associated with risk exposures across the life course (NPHP 2001). For women, these risk exposures include during pregnancy, and for women with low socio-economic status (AWHN 2012a). In other words, good nutrition and physical activity are protective factors for healthy ageing, as is sufficient income and social support. Conversely, overweight and obesity are strongly associated with prevalence and incidence of hypertension, heart disease, diabetes, asthma and the prevalence of arthritis, whilst low levels of education are associated with greater risks of chronic disease in later life (ALSWH 2006). Among women, low levels of education are associated with higher prevalence of hypertension, obesity and arthritis, and with prevalence and incidence of diabetes and osteoporosis (ALSWH 2006).

Risk factors are considered to be modifiable and from a gender equity perspective, there is good evidence that gender-specific prevention and health promotion programs improve outcomes for women. NCD interventions need to be developed for women separately from men, along with efforts to understand the challenges of lifestyle modification for disadvantaged women (NSW Health 2000; Cleland et al 2013).

Hypertension (high blood pressure) and high body mass are the two biggest contributors to the total burden of disease among women. Hypertension accounts for 42% of the CVD burden for women although the burden is less for females than males (AIHW 2010). Pregnancy, pre-eclampsia, gestational diabetes, use of oral contraceptives and use of hormone treatments are associated with increased risk of stroke (Roeters et al 2002; Peters et al 2014).

Diabetes is a powerful risk factor for CVD and smoking is a powerful risk for complications in people with diabetes. Both diabetes and tobacco have an inverse relationship with levels of education (ANPHA 2013).

Women who are overweight or obese have increased risk of gestational diabetes with greater risk for the child of Type 2 diabetes and CVD in adult life (NCD Alliance 2011).

The harmful effects of smoking are higher for women than for men. Women who smoke have a 25% increased risk for CVD independent of all other CVD risk factors, despite the mean consumption of cigarettes per day being lower for women than men. COPD occurs at lower levels of exposure to tobacco smoking in women than men, resulting in earlier development of respiratory disease (Huxley, Woodward 2011).

Preventable risk factors for musculoskeletal disorders (MSD) are much less clear, there is research about work-related musculoskeletal injuries to the neck and lower back from movement, repetitive work and posture (DHHS 1997). Other than workplace related MSDs, the common behavioural risk factors for other NCDs are also common to MSDs (Australian Government 2014). Women in the mid-life and older cohorts of the Australian Longitudinal Study on Women's Health found that women with MSDs are high users of medical services (Dobson 2003).

Poverty and the social gradient are also risk factors for NCDs. In other words, socio-economic position and material circumstances lead to the unequal distribution of health and well-being. The determinants of social position include education, occupation, income, gender and ethnicity. The fundamental structures of society determine the conditions that result in good health, ill health or disease, and in which people grow, live, work and age. It is the differential exposure to, and experience of, those conditions of living (such as education, employment and secure/adequate housing) that create health inequities (WHO 2008; UNDP 2013).

Further, gender norms and roles create inequitable power relations between men and women that affect women's vulnerability and exposure to health risks, their health-seeking behaviour and eventual health outcomes (WHO 2010). For example, strong socio-cultural expectations of women to conform to norms of duty and responsibility to others before themselves can produce behaviours that demonstrate a desire

to please others. Such norms result in behaviours associated with passivity, dependence, unassertiveness and low self-esteem, which in turn, affects women's self-care. Women also frequently carry a heavy burden for domestic work and child-rearing while also in paid employment, which also affects their self-care. Gender and cultural norms influence health seeking behaviours and decision making, whilst low incomes influence access to the resources needed for effective self-care. Women particularly in need of support to adopt health-seeking behaviours include Aboriginal and Torres Strait Islander women, women born overseas in non-English speaking countries, women with disabilities, GLBTQI women and older women. In addition, systemic upstream barriers that influence health-behaviours including insecure housing, sexual discrimination and poverty also need to be addressed. Women who are more vulnerable to poor health behaviours require a more equitable allocation of resources than women and men with higher levels of advantage.

NCDs are strongly related to the social gradient, and this is apparent in mortality rates and in women and men's experiences of living with a long-term health condition (NATSEM 2012). Many people on low incomes experience increased exposure to common modifiable risk factors which are underpinned by the social conditions of their lives. Disadvantaged people, among whom women are over-represented, are generally low income earners, and lack the essentials for a decent life including nutritious food, affordable housing, transport and capacity to pay health care costs. Poverty and NCDs continually reinforce one another to create circumstances that increase inequalities (Beaglehole, Bonita, Horton et al 2011). Women who also live with an NCD while being a primary carer and/or living on a low income are in added jeopardy of being unable to afford the healthcare costs associated with managing a chronic NCD or contribute to household income because of poor health. For example, women experiencing socioeconomic disadvantage are at high risk of inactivity (Cleland et al 2013). Neighbourhood characteristics, social characteristics and cognitive characteristics impact on resilience to risk factors (Cleland et al 2013).

Not only are the most socio-economically disadvantaged more likely to have an NCD, they die on average three years earlier than more affluent people with the same/similar condition. In addition, people who are socio-economically disadvantaged and have an NCD have lower overall wellbeing and reduced likelihood that they can gain income from paid work, so their reliance on Government income support and their use of health services is higher (NATSEM 2012). The consequent losses to productivity result in reduced economic output for any society (Beaglehole, Bonita, Horton et al 2011).

Finally, low health literacy is regarded as a primary risk factor for NCDs. Health literacy is increasingly recognised as a key determinant of health with rates of low health literacy in Australia no different to other developed countries (ABS 2009). Lower health literacy is independently associated with higher rates of morbidity and mortality, poorer health knowledge, greater medication errors and higher hospitalisation rates in general. Low health literacy is more common among socially disadvantaged groups, which are the same populations experiencing higher rates of preventable non-communicable diseases, and greater difficulties accessing health services and managing their health conditions (WUN nd).

Access to care

Access to timely health care is a social determinant of health. If the disease patterns for women are seen as outside the 'norm' and yet the burden for women is certainly no less than it is for men, then there needs to be change in attitudes towards both women and NCDs. It is well established that women experience the symptoms of acute coronary disease differently to men –that is, women commonly report pain that is referred to as 'atypical' – yet for women, it is likely to be the norm. That pain can be sharp and pleuritic, often with neck, jaw, back or epigastric discomfort or dyspnoea, nausea and vomiting, rather than the crushing central chest pain which is considered 'typical' of episodes of CVD pain which is the type of pain experienced by men (McSweeney et al., 2003; Aroney et al 2006). The language of typical and atypical cardiovascular symptoms indicates that men's symptoms of acute coronary disease are the norm, and this is apparent in current CVD guidelines (Heart Foundation 2014). Information about other NCDs is also largely gender neutral (see below).

Because of women's apparently different symptom patterns, clinicians who are unaware of the gender differences in presentation may misdiagnose women when they present with acute coronary disease (Worrall-Carter et al 2011). Although not inclusive of Australian studies (which suggests that such studies do not exist), a meta-analysis showed that women also receive fewer specialist diagnostic procedures (Giralt et al., 2011) with gender differences also in therapeutic management of ischaemic stroke. Other studies have found that women are less likely to receive optimal guideline-based treatment (Ciambrone & Kaski, 2011; Giralt et al., 2011). Women are more likely to experience poor outcomes, including death, after a cardiovascular event (Pepine, 2004; Reeves et al., 2008). Common cardiovascular drugs are generally less effective in women than in men though the specific biological mechanisms are still being researched (McMullen 2014).

Access to affordable health care is also a social determinant of health. Although Australia's health system is founded on universal health insurance, the system does not guarantee affordable, accessible or timely health care. Out-of-pocket costs in the primary health care sector are a barrier to access and equity and getting the right treatment. AWHN (2012b) has previously noted that women have higher annual health care expenses due to their higher use of medical services throughout their lives and their responsibilities for the health of others. Further, women are over-represented in the two lowest-income quartiles and head 87% of lone-parent families. Women's care of children and older family members not only increases the demands on their incomes, it also reduces their time available for paid work.

Women who live in rural and remote areas of Australia have significantly poorer access than urban women to healthcare, and are less likely than urban women to visit doctors/general practitioners frequently or to see specialists. Access to doctors who bulk bill is lower for country women and their out-of-pocket costs are higher (Dobson 2003).

NATSEM (2012) has made the case that timely care of socio-economically disadvantaged Australians with a chronic disease would not only diminish the social gradient in health, but would save billions of dollars annually, improve overall health outcomes, and lead to major social and economic gains. Savings to both the Government and to individuals would result from lower hospital costs, reduced Pharmaceutical Benefits Scheme prescriptions, welfare support payments, and fewer Medicare services each year.

Mainstreaming gender into NCD work

The evidence is now strong for the mainstreaming of gender in policy, programs, and research. AWHN has previously argued (AWHN 2012a) to improve outcomes for women, it is necessary to mainstream gender through gender analysis, gender sensitive research, and the inclusion of gender equity goals in policies, projects and institutional ways of working. Mainstreaming gender requires high-level commitment, governance mechanisms, and robust structures for monitoring, evaluation and accountability.

Gender intersects with health systems which comprise policy-makers in government departments, NGOs including health foundations and the wider system of care providers. Health sector leadership is an anchor for gender-specific responses that support gender equity. Yet, generally there is a lack of responsiveness in Australia to the issues for health raised by knowledge about gender as a social determinant of health and health inequities. Data on mortality and morbidity and women's experiences of NCDs provide the evidence base for research into gender differences in treatment, and primary prevention. This is a key policy issue that requires stronger policy responses than Australia has seen to date (Keleher 2013).

Gender based analysis

Gender based analysis indicates where effective action can be taken. Analysis has shown that Australian health policies are largely gender neutral and lack a social determinants view of health (Keleher 2013). Australian and global literature is replete with recommendations for lifestyle interventions (eg Global Advocacy for Physical Activity 2014) without recognising the barriers to lifestyle change that arise from the gendered social determinants of health (see AWHN 2012a). With the exception of specific women's health policies Australia's health policies show a form of stereotyping that limits women's primary role to reproductive issues with a distinct lack of gender perspective or gender equity considerations (Keleher 2013; Keeling 2011).

Tools are available to assess the extent to which policies and programs recognise and integrate gender, and these are easily applied to gauge policy and program capability with regard to gender dimensions of NCDs (Keleher 2013; WHO 2010). One useful, easy-to-use tool is from the WHO (2010), which comprises five criteria for assessing the gender-responsiveness of policy and programs (Box 1).

Box 1: Gender-responsive Assessment Scale criteria: a tool for assessing programmes and policies

Level 1: Gender unequal

- Perpetuates gender inequality by reinforcing unbalanced norms, roles and relations
- Privileges men over women (or vice versa)
- Often leads to one sex enjoying more rights or opportunities than the other

Level 2: Gender blind

- Ignores gender norms, roles and relations
- Very often reinforces gender-based discrimination
- Ignores differences in opportunities and resource allocation for women and men
- Often constructed based on the principle of being 'fair' by treating everyone the same

Level 3: Gender sensitive

- Considers gender norms, roles and relations
- Does not address inequality generated by unequal norms, roles or relations
- Indicates gender awareness, although often no remedial action is developed

Level 4: Gender specific

- Acknowledges different norms and roles for women and men and how they affect access to and control over resources
- Considers women's and men's specific needs
- Intentionally targets and benefits a specific group of women or men to achieve certain policy or programme goals or meet certain needs
- Makes it easier for women and men to fulfil duties that are ascribed to them based on their gender roles
- Does not address the underlying causes of gender differences

Level 5: Gender transformative

- Acknowledges differences in the norms and roles for women and men and that these affect access to and control over resources
- Considers women's and men's specific needs
- Addresses the causes of gender-based health inequity
- Includes ways to transform harmful gender norms, roles and relations
- The objective is often to promote gender equality
- Includes strategies to foster progressive changes in power relationships between women and men

Gender sensitive research

The under-representation of women in clinical trials has been well documented (Holdcroft 2007; Ballantyne, Rogers 2008, 2011). The fair representation of women and appropriate inclusion of women and gender analysis in medical research is necessary to develop the evidence that will lead to improved health care for women, and to inform clinical guidelines. Despite some advances toward greater inclusion, women are not being included in clinical trials in sufficient numbers proportionate with the disease burden and prevalence in the population.

Cardiovascular trials show that just 30% of participants are women, while only one-third of trials report sex-disaggregated findings. Treatment recommendations are therefore more generalisable for males than females (Worrall-Carter et al 2011) and the research benefits are therefore greater for men because the population is not homogenous. Indeed, trials may be excluding the people most at risk and this exclusion accords a lower status to women's health (Holdcroft 2007: 3). The effect of drugs (side effects and efficacy) to treat CVD in women has therefore not been adequately researched because of the bias towards men in trials. If trials are not designed to measure gender differences (ie, they are gender blind), then they promote gender inequity. To date, there is a lack of adequate gender sensitivity in both research and guidelines.

In addition to clinical trials for treatments, gender sensitive prevention and health promotion programs would improve health literacy about NCDs among women. Well-designed trials are needed to understand what works in raising awareness of women's risks for and vulnerabilities to NCDs and women's symptom patterns. Without equal representation of women in research trials, there is likely also to be a gap in the translation of research knowledge into guidelines.

Gender in NCD Guidelines

Research has shown that Australia's health policies are remarkably gender neutral (Keleher 2013), demonstrating that progress towards gender equity mainstreaming is not sufficiently guiding research and evidence-building in guidelines for management of NCDs. The concepts of sex and gender are not applied appropriately in guidelines. With the exception of the Lung Foundation guidelines on COPD, the guidelines include sex differences in prevalence and incidence, but not gender specific information.

Peak bodies in Australia have key roles in the development of guidelines and are funded by the Australian government to undertake this work. There are peak bodies for all of the NCDs discussed in this position paper. They are engaged in a mix of fund-raising, advocacy, lobbying, research, community and health professional education and the production and dissemination of health information, though their size and capacity varies quite widely. That said, these organisations have leadership roles in the generation of information that is gender aware, and gender specific.

In organising the first Australian forum on women and heart disease, the Heart Foundation (2011) has made recommendations for advancing knowledge and strengthening systems in relation to gender differences in heart disease. The Heart Foundation provides specific information on its website about the nature of heart attacks in women. Nonetheless, the guidelines for management of acute coronary syndromes are gender neutral apart from noting that women may have 'atypical' symptoms. It is time that CVD guidelines are updated to reflect the evidence that is now established on gender differences and the implications for gender specific treatment.

Diabetes Australia's website does not yet carry any gender specific information. Diabetes Australia is campaigning for a new National Diabetes Strategy to which the Coalition government has committed. This provides a not-to-be-missed opportunity to address gender-specific information based on the evidence available, to ensure that the distinct needs of women and men with diabetes are recognised and incorporated into primary prevention, health promotion and treatment/care guidelines.

Cancer Councils websites produce detailed information by sex on prevalence and incidence as well as risk but limited information on gender. Similarly, Arthritis Australia has developed reports and health information but apart from indicating that certain types of arthritis are more common in women, there is little by way of gender analysis.

Tobacco cessation programs are improving the gender sensitivity of programs though is much work to be done (Greaves et al 2006). QUIT Victoria's website demonstrates better gender awareness than the sites in other states.

Guidelines for the management of COPD are managed by the Lung Foundation Australia and The Thoracic Society of Australia and New Zealand as part of a national COPD program. The sex and gender differences in COPD prevalence, symptoms, diagnosis and determinants of COPD (Pederson, Hoyak et al 2007) have been incorporated into the Australian guidelines on COPD (McKenzie et al 2012) which can be regarded as gender-sensitive and equitable.

In summary, most NCD peak bodies are not yet sufficiently gender sensitive or inclusive of women. Most guidelines are gender blind. By not demonstrating awareness of women specific issues in NCDs, those guidelines and their peak bodies are promoting gender inequity. The lack of data from trials about women leads to assumptions in treatment that may or may not be correct. Further, this lack of gender-based evidence may be the reason why cardiovascular disease outcomes in women are not improving at the same rate as for men (Pilote 2007).

Conclusion

Addressing the gender dimensions of NCDs is essential to constructing effective and sustainable strategies that will ameliorate the negative impacts of NCDs on women's lives. For that to occur, there are levels of change needed:

- gender sensitive policy is essential to provide leadership for the integration of gender into all levels of research, strategy and action
- research policy to guide gender sensitive research is vital to inform treatment and prevention guidelines
- guidelines are rewritten to incorporate the most recent evidence about gender differences into clinical practice.

This paper challenges the gender neutral approaches taken in policy, research and clinical guidelines. The time for gender-transformative approaches has come. They are necessary to achieve gender equity and ensure that women's experience of NCDs is transformed.

References

- ABS. 2009. Health literacy: Australia [Electronic Version]. 4102.0 - Australian Social Trends, June 2009.
- Aroney C, Aylward P, Kelly A, Chew D, Clune E. 2006. Guidelines for the management of acute coronary syndromes 2006. *MJA*, Vol 184 (8), 17 April 2006, pp s1-s28.
- Arthritis and Osteoporosis Victoria. 2013. A problem worth solving: the rising costs of musculoskeletal conditions in Australia. Elsternwick: Arthritis and Osteoporosis Victoria.
- Arthritis Australia. 2007. Painful realities: The economic impact of arthritis in Australia 2007. (Report By Access Economics Pty Limited for Arthritis Australia 31 July 2007), Canberra.
- Australian Government. 2014. Cancer Statistics in Australia. <http://canceraustralia.gov.au/affected-cancer/what-cancer/cancer-australia-statistics>, accessed 16 February 2014.
- Australian Government, Department of Health. Prevention, treatment and management of musculoskeletal disorders. <https://www.health.gov.au/internet/main/publishing.nsf/Content/pq-arthritis-prevent>, accessed 15 February 2014.
- Australian Institute of Health and Welfare. 2010. Women and heart disease: cardiovascular profile of women in Australia. ISSN 1323-9236; ISBN 978-1-74249-015-1; Cat. no. CVD 49. Available: <http://www.aihw.gov.au/publication-detail/?id=6442468369&ctab=2>, accessed 2 January 2014.
- Australian Institute of Health and Welfare, 2012a. Cervical screening in Australia 2009-2010 (October 2012).
- Australian Institute of Health and Welfare & Cancer Australia. 2012b. Breast cancer in Australian: an overview. Cancer series no. 71. Cat. No. CAN 67. Canberra: AIHW.
- Australian Institute of Health and Welfare 2012c. Australia's health 2012. Australia's health series no.13. Cat. no. AUS 156. Canberra: AIHW.
- Australian Institute of Health and Welfare. 2013. BreastScreen Australia monitoring report 2010-2011. Cancer series 77. Cat. no. CAN 74. Canberra: AIHW.
- Australian Institute of Health and Welfare. 2014. Diabetes. <http://www.aihw.gov.au/diabetes/>
- Australian Longitudinal Study on Women's Health. 2006. Trends in women's health 2006: results from the ALSWH. Priority conditions, risk factors and health behaviours. Report prepared for the Commonwealth Department of Health and Ageing, University of Newcastle and University of Queensland.
- Australian Medical Association. 2014. Women's Health Position Statement. AMA, Canberra.
- Australian National Health Prevention Agency. 2013. Smoking and disadvantage. Commonwealth of Australia, Canberra.
- Australian Women's Health Network. 2012a. Women and Health and Wellbeing Position Paper. Drysdale, AWHN.
- Australian Women's Health Network. 2012b. Women and Health Reform Position Paper. Drysdale, AWHN.
- Australian Women's Health Network. 2012c. AWHN Women and Mental Health Position Paper. Drysdale, AWHN.
- Ballantyne A, Rogers W. 2011. Sex bias in studies selected for clinical guidelines. *Journal of Women's Health* 20(9): 1297-1306.
- Ballantyne A, Roberts W. 2008. Fair inclusion of men and women in Australian clinical research: views from ethics committee Chairs. *Medical Journal of Australia*, 188(11): 653-656.
- Barrett-O'Connor E. 2007. Women and cardiovascular disease. *CMAJ*, 176.6
- Beaglehole R, Bonita R, Horton R et al. 2011. Priority actions for the non-communicable disease crisis. *The Lancet*, April 23 2011: pp 1448-47.
- Betihavas V, Davidson P, Newton P, Frost S, Macdonald P, Stewart S. 2012. What are the factors in risk prediction models for rehospitalisation for adults with chronic heart failure? *Australian Critical Care*, Volume 25, Issue 1, February: pp 31-40.
- Better Health Channel. 2014. Type 2 Diabetes. Available: http://www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Diabetes_Type_2, accessed 6 April 2014.
- Ciambrone G, and Kaski JC. 2011. The importance of gender differences in the diagnosis and management of cardiovascular disease. *Current Pharmaceutical Design*. 2011;17(11):1079-81.
- Cleland V, Granados A, Crawford D, Winzenberg T, Ball K. 2013. Effectiveness of interventions to promote physical activity among socioeconomically disadvantaged women: a systematic review and meta-analysis. *Obesity Review*, Mar;14(3): pp 197-212.
- Commonwealth Financial Planning. 2009. Women Carers in Financial Stress Report. Commissioned by Carers Australia. NATSEM, University of Canberra for Comm Financial Planning, Canberra.
- Department of Health and Human Services. 1997. Musculoskeletal Disorders and Workplace Factors: a critical review. Centers for Disease Control and Prevention. Atlanta, Publication no 97-141.
- Diabetes Australia. 2013. Diabetes in Australia. Available: <http://www.diabetesaustralia.com.au/Understanding-Diabetes/Diabetes-in-Australia/>, accessed 30 March 2014.
- Dobson A & the ALSWH team. Chronic Disease and Health Services in Australia. Summary report prepared for the Australian Commonwealth Department of Health and Ageing. Australian Longitudinal Study on Women's Health, University of Newcastle & University of Queensland. August 2003. (Report no. 77).

- Giralt D, Domingues-Montanari S, Mendioroz M et al. 2012. The gender gap in stroke: a meta-analysis. *Acta Neurol Scand*, Feb; 125(2): 83-90.€
- Global Advocacy for Physical Activity. 2014. Physical activity is central to the global agenda to prevent non communicable disease. Available: <http://www.globalpa.org.uk/ncd-prevention/>, accessed 19 January 2014.
- Greaves L, Jategaonkar N. 2006. Tobacco policies and vulnerable girls and women: toward a framework for gender sensitive policy development. *J Epidemiol Comm Hlth*, 60(Supp II) pp ii57-ii65.
- Heart Foundation of Australia, 2012a. Smoking Statistics Fact Sheet. Available: <http://www.heartfoundation.org.au/SiteCollectionDocuments/Factsheet-Smoking.pdf>, accessed 2 January 2014.
- Heart Foundation of Australia. 2012b. Reducing risk in heart disease: An expert guide to clinical practice for secondary prevention of coronary heart disease. National Heart Foundation of Australia and Cardiac Society of Australia and New Zealand.
- Heart Foundation of Australia. 2014. Getting the facts on women and heart attack. <http://www.heartattackfacts.org.au/heart-attack-facts/women-and-heart-attack/>, accessed 13 March 2014.
- Holdcroft A. 2007. Gender bias in research: how does it affect evidence based medicine. *Journal of the Royal Society of Medicine*, 100(1): 2-3.
- Huxley R. and Woodward M. 2011. Cigarette smoking as a risk factor for coronary heart disease in women compared with men: a systematic review and meta-analysis of prospective cohort studies. *The Lancet*, Vol 378, Issue 9799: 1297-1305.
- International Agency for Research on Cancer. 2013. Latest World Cancer Statistics. Press Release No 223. Geneva, WHO.
- Keeling A. 2011. Halting the rise of non-communicable diseases: an urgent priority for women's health. *Diab Res and Clin Prac*, 92: 143-144.
- Keleher H. 2013. Policy Scorecard for Gender Mainstreaming: gender equity in health policy. *ANZJPH*, 37:111-17.
- McKenzie DK, Abramson M, Crockett AJ, Dabscheck E, Glasgow N, Sue Jenkins, McDonald C, Wood-Baker R, Ian Yang A, Frith PA on behalf of Lung Foundation Australia and the Thoracic Society of Australia and New Zealand. 2012. The COPD-X Plan: Australian and New Zealand Guidelines for the management of Chronic Obstructive Pulmonary Disease V2.34.
- McMullen J. 2014. Examining gender differences in mouse models of heart failure. Research project description available at: https://www.bakeridi.edu.au/research/cardiac_hypertrophy/. Accessed 12 March 2014.
- McSweeney JC, Lefler LL, Fischer EP, Naylor AJ Jr, Evans LK. 2007. Women's pre-hospital delay associated with myocardial infarction: does race really matter? *J. Cardiovasc. Nurs.*, 22: 279-285; quiz 286-287.
- National Public Health Partnership. 2001. Preventing Chronic Disease: A Strategic Framework. Canberra, NPHP.
- NATSEM, 2012. The Cost of Inaction on the Social Determinants of Health, CHA-NATSEM Second Report on Health Inequalities, May 2012.
- NCD Alliance. 2011. Non-Communicable Diseases: a Priority for Women's Health and Development. Available: http://www.who.int/pmnch/topics/maternal/2011_women_ncd_report.pdf, accessed 10 January 2014.
- NSW Health. 2000. Gender Equity in Health. NSW Health Department, State Health Publication No: (HSP) 000015.
- Parkinson L, Curryer C, Gibberd A, Cunich M & Byles J. 2013. Good agreement between self-report and centralised hospitalisations data for arthritis related surgeries. *Journal of Clinical Epidemiology*, 66(10): 1128-1134.
- Pederson AP, Hoyak KA, Mills S, Camp PG. 2007. Reflecting the Changing Face of Chronic Obstructive Pulmonary Disease/ Sex and Gender in Public Education Materials on COPD. *Proc Am Thorac Soc Vol 4*. pp 683-685, 2007.
- Pepine CJ. Ischemic heart disease in women: facts and wishful thinking. *J. Am. Coll. Cardiol.* 2004; 43: 1727-1730.
- Peters S, Huxley R, Woodward M. Diabetes as a risk factor for stroke in women compared with men: a systematic review and meta-analysis of 64 cohorts, including 775 385 individuals and 12 539 strokes. *The Lancet*, Published Online March 7, 2014, [http://dx.doi.org/10.1016/S0140-6736\(14\)60040-4](http://dx.doi.org/10.1016/S0140-6736(14)60040-4)
- Pilote L. 2007. Sex specific issues related to cardiovascular disease: a synopsis of the 2007 supplement. *CMAJ* 176(6): 7980-791.
- Reeves MJ, Bushnell CD, Howard G et al. Sex differences in stroke: epidemiology, clinical presentation, medical care, and outcomes. *Lancet Neurol*. 2008; 7: 915-926.
- Roeters van Lennep JE, Tineke Westerveld H, Willem Erkelens D, van der Walla EE. 2002. Risk factors for coronary heart disease: implications of gender. *Cardiovasc Res* (2002) 53 (3): 538-549.
- Sen G, Ostlin P. Unequal, unfair, ineffective and inefficient. Gender-inequity in health: why it exists and how we can change it. Final report to the WHO Commission on Social Determinants of Health, September 2007. Geneva, World Health Organization.
- United Nations Development Programme. 2013. Addressing the Social Determinants of Noncommunicable Diseases. New York, UNDP.

WHO. 2008. Closing the gap in a general: Health equity through action on the social determinants of health: Final report of the Commission on the Social Determinants of Health (CSDH). Geneva, WHO.

WHO. 2010. Gender, Women and Primary Health Care Renewal. Discussion Paper. Geneva: WHO.

WHO. 2011. Global status report on noncommunicable diseases 2010. Geneva, WHO.

WHO. 2011. Best buys First Global Ministerial Conference on Healthy Lifestyles and Noncommunicable Disease Control (Moscow, 28-29 April 2011).

WHO. 2014. Global Health Observatory: Risk Factors. Available: http://www.who.int/gho/ncd/risk_factors/en/, accessed 6 April 2014.

Wong M, Gucciardi E, Li L, Grace SL. 2005. Gender and nutrition management in type 2 diabetes. *Can J Diet Pract Res*. Winter, 66(4), pp 215-20.

World Universities Network. nd. Global Health Literacy Network. <http://www.wun.ac.uk/research/wun-global-health-literacy-network>, accessed 16 February 2014.

Worrall-Carter L, Ski C, Scruth E, Campbell M, Page K. 2011. Systematic review of cardiovascular disease in women: Assessing the risk. *Nursing and Health Sciences*, 13, 529–535.

Yeats B, Tipper R, 2010. Women and diabetes: Gender Impact Assessment 13, Women's Health Victoria, Melbourne: Women's Health Victoria.



