



gender health differences no-one can ignore

by James Caulfield

When it comes to good health care, what's good for the goose isn't necessarily what's good for the gander.

In contemporary society discriminating and dividing the genders is rightly frowned upon in most instances, but for Quality Use of Medicine and good health care in general, disregarding gender could have far-reaching negative impact. As a health determinant, gender is neither a risk factor nor a protective measure.

Professor Julie Byles from the University of Newcastle Research Centre for Gender, Health and Ageing told *Australian Pharmacist* that gender is fundamental to who a person is, and can impact on health significantly.

'I think it's important to consider people's health in terms of their own personal context, and gender is obviously an incredibly important part of that. What gender we are is a thing we wake up with every morning,' she said.



'It makes a difference in terms of we're starting to consider differences in men's health. We've been talking about women's health for many years now but people are starting to consider also what masculinity means to health as well.

'But when you're considering any pharmaceuticals, it's a very different consideration for women than for men, because the first questions you've got to ask yourself are – Am I pregnant? Might I want to be pregnant? Am

I breastfeeding? – and consider what are the implications for taking these medications in those circumstances.'

Research in gender health

According to its 2005 figures, there isn't a single OECD member country where men have an equal or higher life expectancy than women.¹ In Australia, for the years 2002-2004, men aged 25 years had a life expectancy of 79.1 years, while for women it was 83.7 years.¹

Australians of either gender appear to have a pretty positive view of their own personal health, and gender differences in health don't seem to be represented in people's attitudes. The 2004-05 National Health Study (NHS) found that 'self-reported status is similar for males and females, but declines with age'.¹

Linda Bren from the US Food and Drug Administration (FDA) said that studies had found that men and women are different in ways that went beyond their reproductive systems, hormones, and bone structure.²

'They get many of the same diseases, but they may have different symptoms, their diseases may progress differently, and they may respond differently to treatment,' she said.

'Researchers do know that differences may occur in the way men and women absorb certain drugs into the bloodstream, distribute them to the body's tissues, break them down, and rid them from the body.'

According to a Finnish study, the oversimplified summation of gender health is 'women get sicker but men die quicker'.³

The researchers said they found a more complex picture in reality: 'Although women had poorer health than men for a number of health indicators, we also find gender equality and even male excess for some indicators. Furthermore, the results suggest that a male excess in illhealth is likely to be found with more severe domains of illhealth among elderly people.'

However a British study found that significantly poorer health for females 'is only consistently found across the life span for psychological distress and is far less apparent, or reversed, for a number of physical symptoms and conditions'.⁴

'Detailed inspection of papers on gender differences published in the last decade reveals that our findings are not unique, but that a relatively undifferentiated model of consistent sex differences has nevertheless continued to predominate in the literature. We believe that the topic of gender differences in health warrants periodic re-examination,' the authors said.

A Canadian study found that women and men are not equally affected by different factors.⁵

'Social structural and psychosocial determinants of health are generally more important for women and behavioural



Dr Judith Hsia

determinants are generally more important for men,' the authors said.

'Gender differences in exposure to these forces contribute to inequalities in health between men and women, however, statistically significant inequalities remain after controlling for exposure. Gender-based health inequalities are further explained by

differential vulnerabilities to social forces between men and women.'

Even for very common serious diseases such as coronary heart disease, researchers are finding they have much to learn about the effect of gender.

Dr Judith Hsia from George Washington University, USA said that even though heart disease was a leading killer of both men and women, women do not receive as effective treatment as men.⁶

'Gender differences have been observed in treatment practices, but since more is not necessarily better in this setting, the optimal approach for women has yet to be established,' she said.

Clinical trials, medical testing and gender

According to Prof. Byles, current practices and attitudes concerning gender and medicines clinical trials feature some inherent contradictions.

'We do make assumptions that whatever happens in men will also happen in women, but the very reason that we leave women out of drug trials is because we think that their gender may confound the results, so it's a bit of a contradiction,' she said.

'I think it is really important that we consider not only the implications and potential risks to women, but also whether or not these drugs are going to be equally useful for women. Volume of distribution is different, body mass is different so I think a lot of these things need to be taken into account when you're thinking about men and women in terms of medications.

'Also, the probability of co-medications that people may be taking may be quite different for women than men, and that's not even prescribed medications but also OTC medications, herbal medications. Women have quite different patterns of taking complementary medicines than men.'

Dr Ken Harvey from La Trobe University has said patient populations used particularly in early stage clinical trials are usually quite homogenous 'because the early trials by

definition exclude pregnant people, older people, people with multiple co-morbidities etc, basically they are just trying to compare the efficacy of a drug against either placebos or comparable drugs'.⁷

'Controlled clinical trials are important early stage trials to determine whether a drug works or not in a very controlled situation, it doesn't mean it doesn't have terrible side-effects when it gets out into the population,' Dr Harvey said.

In the USA, Dr Robert Temple from the FDA Office of Medical Policy said a study of medicine labels had found 66% contained a statement about gender, with 22% describing actual gender differences, but none recommending a different dose depending on gender.²

According to Dr Hsia, women's body's make the standard treadmill exercise stress test less useful in diagnosing potential heart disease.⁶

'Evaluation for suspected coronary disease differs in women because of frequently misleading results provided by treadmill testing without imaging,' she said.

'In one study comparing the accuracy of treadmill tests in women and men, misleading treadmill results occurred in 35% of the women studied. When combined with nuclear imaging using thallium (a low-dose radioisotope), the accuracy rate improved in women, provided the interpreter was trained to take breast tissue and valve plane artefacts into account.



Dr Ken Harvey

'Abnormal treadmill tests have been related to phases of the menstrual cycle and to oral contraceptive use, implicating sex hormones as a factor. It may be estrogen's effect on cardiocytes – the cells of the heart muscle. Another explanation for the variations in test results may be the effect of catecholamines (stress hormones, i.e. adrenaline) on the vasomotor tone and the higher prevalence of mitral valve prolapse among women.'

Gender in the aged

Endocrinologist Dr Carolyn Allan from Andrology Australia told *Australian Pharmacist* that one of the most controversial areas in men's health is the effect of the decrease in testosterone levels in ageing men.

'As men age they do experience a slight decline in their testosterone level. If I compare it to women, to paraphrase a TS Elliot poem, women go out with a bang and men go out with a whimper,' she said.

'During menopause women universally experience a significant decline in hormones and oestrogen level from about 50 years of age.



Dr Carolyn Allan

'The decline in testosterone levels is more modest, with the magnitude of the fall differing amongst men. Men start to experience a decline in testosterone levels from about the age of 30, and they fall by about 1-2% per year thereafter.

'Declining testosterone levels have been correlated with a

decrease in sexual function and sense of wellbeing, loss of bone density, decrease in muscle mass and strength, increase in fat mass, and potentially an increased risk of cardiovascular disease. However these are all observational associations. Research examining the role of testosterone replacement in these settings is still ongoing.'

Prof. Byles said that because women have a longer life-expectancy than men, older women are more likely to end up living alone, which presents health challenges not seen at other times of life.

'It's not just gender but also a broader social context such as who, if anyone, is living with you. That can make a big difference in terms of things like being able to afford medications, being able to take medications, having somebody around if you have an adverse reaction to those medications,' Prof Byles said.

'Even factors like knowing that you are having exacerbations, for instance, somebody who has asthma, older people who have asthma are less likely to be aware of their symptoms.

'If you're in a relationship and living with somebody they might tell you "your breathing is a bit difficult at the moment, it's a bit laboured" but if you're living alone because you're an older woman and your husband has died, then there is no one to tell you and so you might present later with an acute exacerbation of asthma.'

One UK study of women aged 60 years and over found that while even in older age men and women self-assess their health similarly, women have a greater risk of problems such as mobility.⁸

'Older women are substantially more likely to experience functional impairment in mobility and personal self-care than men of the same age,' the authors said.

'These findings persist after controlling for the differential social position of men and women according to their marital status, social class, income and housing tenure.

'The results reveal a paradox in health reporting among older people... Older women's much higher level of functional impairment co-exists with a lack of gender difference in self-assessed health.'

Gender in the pharmacy

According to Prof. Byles, not enough is yet known about how gender affects the way a person will manage their illness, and consequently how they will interact with pharmacy.

'Men and women will have different attitudes towards illness, and also to the management of illness, how much they want to be involved, how they relate to their condition, what it means to them, there will be very different perspectives on that,' she said.

She said the best care would involve understanding a patient in their overall social context in addition to their health issues.

'That involves considerations like – are they living alone? Do they have someone else who is going to be a partner in taking their medications? For women – are they pregnant? Are they breastfeeding? Are they considering becoming pregnant? What other medications are they taking and whether or not they might interact?

'I think on general compliance issues, there are differences between men and women there as well, how they're going to remember to take those medications, those sorts of things.'

Dr Allan said that factors present in gender differences in particular illnesses can impact on patients' behaviour in the pharmacy.

'For example, we know that cardiovascular disease is more prevalent in men than women; hormonal factors, adverse lifestyle factors (e.g. smoking), and the fact that cardiovascular disease is underappreciated and therefore not tested for and diagnosed in women all contribute to this,' she said.

'There is also the whole issue of health seeking behaviour – that women are more likely to go to their doctor than men are.'

Pharmacists can be an important source of advice for patients on issues where finding information can be difficult.

An Australian study last year found that while the information included with medicines often won't have a statement on safe usage while breastfeeding, information often exists to say it is safe.⁹

'Product information rarely states that the drug is safe or advisable for breastfeeding women,' the author said.

'For the vast majority of maternal medications, the amount of medication an infant would receive through breastfeeding is less than 1% of an infant dose. In general, if the medication



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is safe to use in infants, it will be safe for the breastfeeding mother.

'Only a small number of medications are contraindicated during breastfeeding: these include antineoplastic agents, ergotamine, methotrexate, cyclosporin, and radiopharmaceuticals.'

Medication Management Reviews (MMRs) may be important opportunities for pharmacists to detect gender-related medicine problems. Gender-specific issues can also lead to unique problems for pharmacists themselves. In the US there has been ongoing controversy over whether pharmacists have the right to decline to sell emergency contraception to women. Some states have legislated that they specifically have the right, others that they specifically don't.¹⁰

In Australia a recent pilot study looked at what barriers there are for women pharmacists providing counselling to male patients suffering sexual dysfunction.¹¹ Identified barriers included the stereotype of the pharmacist as a male, communication skills, e.g. differences in how men and women listen and respond to information, and environmental factors, e.g. is there private counselling area?

Future directions

It has been widely acknowledged that gender health has many facets yet to be uncovered.^{5,12} In the US work has started on the Demographic Information and Data Repository (DIDR), a program developed by the FDA Office of Women's Health (OWH).² The OWH's Dr Katherine Hollinger said DIDR would help the FDA study health factors such as gender and ethnicity more closely.

'It will allow us to better look at sub-population issues and differences in drug response that may affect safety and effectiveness,' Dr Hollinger said.

'And it will allow us to not only track inclusion of women and other populations in clinical trials, but to monitor the types of trials women, children, or the elderly are participating in and identify patterns that are observed.'²

In Australia, Prof. Byles said the Research Centre for Gender, Health and Ageing is continuing to make investigations with large-scale projects such as the Australian Longitudinal Study on Women's Health.

'We know a lot about how diseases affect people, but I think there's probably not enough consideration as to the extent to which gender makes a difference to the impact of that condition, and also how gender makes a difference to the management of conditions,' she said.

While such studies are of course vital in developing a knowledge base, for pharmacists in community, hospital and other settings the central challenge will remain implementing findings in practice.^{2,10,11}

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