Disease awareness advertising
Women’s intentions following exposure

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Background
In Australia, where direct to consumer advertising of prescription medicines is prohibited, pharmaceutical companies can sponsor disease awareness advertising targeting consumers. This study examined the impact of disease awareness advertising exposure on older women’s reported behavioural intentions.

Method
Women were approached in a shopping centre and randomly assigned mock advertisements for two health conditions. Disease information and sponsors were manipulated.

Results
Two hundred and forty-one women responded to 466 advertisements. Almost half reported an intention to ask their doctor for a prescription or referral as a result of seeing the advertisement, but more reported they would talk to their doctor and ask about treatments and tests. Participants were more likely to report an intention to ask for prescriptions if they perceived the health condition to be severe and themselves susceptible or if they had viewed advertisements containing limited information on the disease.

Discussion
Disease awareness advertising may stimulate demand for prescription medicine products. This has serious implications for general practitioners and regulators.

Keywords: doctor-patient relations; education, health (to lay people); public health policy; public health

There is growing concern from advisory and advocacy groups in Australia, as well as in other countries, regarding the influence of the pharmaceutical industry on the prescribing habits of doctors.1 2 Concern has centred around marketing practices that directly influence doctors’ prescribing behaviour,3 4 as well as pharmaceutical promotions that directly target consumers.5 6

While direct-to-consumer advertising (DTCA) of prescription medicines is illegal in Australia, pharmaceutical companies are allowed to engage in disease awareness advertising (DAA) via a range of media. Disease awareness advertising in Australia is currently regulated by the industry body Medicines Australia. Edition 16 of the Code of Conduct recently came into effect with a specific section (Section 12.7) on ‘Disease education activities in any media’.7 The guidelines state that advertisements cannot include the name of a specific prescription medicine but may include disease information such as the symptoms and prevalence of a disease.7

International research into the effects of DAA demonstrate that it can increase consultation rates as well as prescriptions for the advertiser’s product.8 9 A recent survey of Australian general practitioners10 reported in the popular medical press found a pharmaceutical mass media campaign coincided with increased patient requests about the advertiser’s product.

Disease awareness advertising has been labelled as disease mongering – ‘widening boundaries of treatable illness in order to expand markets for those who profit from treatments’.3 Disease awareness advertising has been criticised for promoting health conditions with vague or nonspecific symptoms, or exaggerating the prevalence of a condition and using fear appeals, such that consumers are encouraged to identify themselves as having the condition or being at greater risk of contracting it.1 While DAA can be eye catching and emotive, it often provides very limited disease information,11 which is the same criticism received by DTCA.12

The pharmaceutical industry, and its proponents, argue that advertising to consumers provides education about health conditions and treatment options, and can assist in earlier diagnosis and treatment, improved patient-doctor relationships, and enhanced medication compliance.13 14 There is also the argument of the potential for the pharmaceutical industry to advertise conditions that have high levels of underdiagnosis such as diabetes.15

The purpose of this study was to determine the impact of DAA on the behavioural intentions of older Australian women, including their intention to seek further information, and/or request a prescription or referral from their doctor. The study also examined perceptions of the severity of, and their susceptibility to, two advertised health conditions.

Method
The study design included the development of mock magazine advertisements for two health conditions (Figure 1). Women were selected as the target group as they have higher magazine readership in Australia and generally have greater involvement in seeking health information and making health decisions. The age range of 45 years or over was chosen to facilitate the selection of targeted health conditions for the advertisement stimuli.

The health conditions were osteopaenia, which is a state of early bone loss that can potentially increase the risk of developing osteoporosis;16 and fibromyalgia, which is thought to be a disorder of the central nervous system associated with intensified pain due to abnormal sensory
Forget about future fractures.
Are you over 60 or post-menopausal with a family history of osteoporosis?
It may be that you have osteopenia or early bone loss which can increase your risk of developing osteoporosis and future bone fractures.
To see if you have osteopenia you need to take a bone density test, available at many pharmacies. If your bone density test score is low then you should talk with your doctor. Your doctor can advise about new and effective medicines to treat osteopenia that help prevent the onset of osteoporosis.

Understanding Osteopenia...
Osteopenia is a state of early bone loss which can increase your risk of developing osteoporosis and future bone fractures. It is of particular concern if you are over 60 years of age or post-menopausal with a family history of osteoporosis.

What is Osteopenia?
Osteopenia is a condition that describes lower bone mass and is a state which may precede osteoporosis. There is no obvious symptoms to osteopenia. Women over 60 years of age, and post-menopausal women with a family history of osteoporosis are at higher risk.

What is Osteoporosis?
Osteoporosis is a disease in which density and quality of bone are reduced, leading to bone weakness and increased risk of fracture, particularly of the spine, wrist and hip. Two million Australians are affected by osteoporosis, and every 8 minutes someone is admitted to hospital with a fracture.

Diagnosis and Management of Osteopenia
Women at risk of osteopenia can arrange for a bone-density test through their doctor or other health provider to determine their bone density score. If they have osteopenia then there are a range of ways to manage the condition including increasing calcium intake and increasing strength-building exercise.

Treatment
Women with osteopenia can talk to their doctor about new and effective medicines which may help to prevent further bone loss. Two million Australians are affected by osteoporosis, and every 8 minutes someone is admitted to hospital with a fracture.

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Figure 1. Mock magazine advertisements for osteoporosis and osteopenia
scale was 0.822, indicating an appropriate level of internal consistency. Data was analysed with SPSS V15. Descriptive analysis was conducted and nonparametric tests were used as the data was not normally distributed.23

Results
A total of 977 women were approached to participate in the study, with 30% agreeing. However, only 82.5% of those who agreed were eligible. A total of 241 women aged 48–85 years (median age 64) participated in the survey. The demographic profile of participants was similar to women in this age group in the Wollongong local government area and Australian census data (except that a greater proportion of participants in the study had higher levels of educational attainment).

Questionnaires were completed for a total of 466 advertisements: 232 on fibromyalgia and 234 on osteopaenia, and most participants rated the advertisements as easy to understand. Only 36% of participants agreed that they or someone they knew well had suffered from fibromyalgia, but 64% agreed that they or someone they knew well had suffered from osteopaenia.

Behavioural intentions
Forty-nine percent of the participants agreed that they would ask their doctor for a prescription or referral as a result of seeing the advertisement, and the majority agreed that they would take other actions (Table 1).

Contingency table analysis indicated a statistically different result between reported behavioural intentions for the two different health conditions: participants viewing the advertisement for osteopaenia were more likely to report an intention to talk to their doctor about the condition (p=0.029) and to ask their doctor about treatments or tests (p=0.024) (Table 2).

Behavioural intentions did not differ significantly between the sponsor manipulations. Participants who viewed low information advertisements were more likely to report an intention to ask their doctor for a prescription or a referral (p=0.036) than those who viewed high information advertisements (Table 3). Mann-Whitney U tests showed that participants who intended to ask for a prescription or referral were more likely to be older (p<0.001), and less educated (p<0.001).

If the participant or someone they knew well had suffered from the advertised health condition then they were significantly more likely to agree that they would take action compared with those without personal experience of the condition (Table 4). This was particularly the case for intention to ask for a prescription or referral, with 57.3% of participants with personal experience reporting this intention compared with 39.3% of those without (p<0.001).

Perceived severity and susceptibility
Participants perceived both conditions to be severe (mean score of 4.53 for fibromyalgia and 4.42 for osteopaenia on a six point scale). There was no significant difference between scores for the two conditions. When asked to rate how likely it would be that they would experience the advertised conditions (on a six point scale), participants perceived themselves to be susceptible to both conditions (mean score of 3.40 for fibromyalgia and 3.88 for osteopaenia) but significantly more susceptible to osteopaenia (p<0.007). Just over 25% of participants estimated that it was very likely that they would experience fibromyalgia in the future, whereas 36% estimated that it was very likely that they would experience osteopaenia. Participants who nominated an intention to ask their doctor for a prescription or a referral were significantly more likely to perceive higher susceptibility to the health conditions (mean score 4.14 compared with 3.12 for participants who did not intend to ask; p<0.001) and have higher severity scores (mean score of 4.77 compared with 4.28; p<0.001).

Discussion
Participants who viewed the advertisements with less disease information were more likely to express an intention to ask their doctor for a prescription or a referral. This finding may concern GPs as it indicates the potential for industry DAA to stimulate patient requests for prescription medicines – this has been found in overseas studies of DAA.8,9 Such requests may cause tension in patient-doctor relationships and valuable

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<td>As a result of seeing this advertisement would you...?</td>
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<td>Talk to your doctor about the condition</td>
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<tr>
<td>Ask your doctor about treatments or tests</td>
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<tr>
<td>Look for information as directed by the advertisement</td>
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<tr>
<td>Look for information from other sources</td>
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<tr>
<td>Ask your doctor for a prescription or a referral</td>
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<th>Table 2. Behavioural intention by condition type</th>
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consultation time may be spent re-educating patients, as has been found for DTCA. A recent survey found that the majority of Australian GPs who received patient requests about a medication as a result of DAA were opposed to these advertising campaigns.10

The results have important implications for regulation in Australia as they indicate that DAA can stimulate patients’ intention to make requests to doctors for prescription medicine products, particularly if limited disease information is provided. While the effect of the more specific guidelines for DAA in Medicines Australia’s Code of Conduct, edition 16 are yet to be determined, regulators should provide more guidance to advertisers regarding types of disease information and the level of detail that should be provided. More prescriptive guidelines are provided in other countries such as the United Kingdom.25

Just over one-quarter of participants estimated that it was very likely that they would experience fibromyalgia in the future, whereas international data suggests that 2–10% of women have the condition.26 Similarly, 36% estimated that it was very likely that they would experience osteopenia, however, an Australian study of women aged over 50 years found a prevalence of 15%.27 While participants were not asked about their perceived susceptibility to the conditions before being shown the stimuli, the results suggest that providing more detailed prevalence and risk factor information in DAA may help consumers to more accurately identify their susceptibility. Participants that reported an intention to ask for a prescription or referral perceived a higher level of susceptibility to, and severity of, the health conditions. These results provide some support for the argument that DAA can be seen as disease mongering and can inflate perceptions of the prevalence of the advertised disease.3

Study limitations

A limitation of this study is that participants’ involvement with the stimuli would be different to how they would view magazine advertisements in a ‘real life’ context. Further research is required to determine whether reported intentions to speak with GPs and request a prescription or referral articulate into actual behaviour.

Other limitations include sampling by intercept method which attracts a level of response bias and results may not be representative of all Australian women in this age group. Due to the limited nature and size of the sample, the findings should be interpreted with caution and may not be generalisable to the Australian population. It is possible that participants confused the advertised condition ‘osteopenia’ with the better known condition ‘osteoporosis’. This may have led to a greater perceived severity and susceptibility to the condition, increased agreement for personal experience with the condition, and intention to take action.

Further studies are required with true DAA for a range of health conditions, utilising larger and more representative samples to confirm these results. However, results of this study indicate the potential for DAA to influence patients to request prescription medicine or a referral from their doctor. In the current study, the effects were most pronounced in older, less educated women, along with those reporting personal experience with the health condition and those viewing advertisements with limited disease information.

Medicines Australia has the opportunity to provide more detailed guidance regarding the amount and types of disease information to be included in industry DAA to help ensure it is of greater educational value, and does not serve as a method of stimulating demand for prescription medicines.

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