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Characteristics of medication advertisements found in US women’s fashion magazines

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Abstract
Background: Although prescriptions are dispensed at discretion of medical professionals, many pharmaceutical companies use direct-to-consumer (DTC) advertising to increase sales. Over-the-counter (OTC) medications are similarly marketed.

Methods: We examined the content of advertisements in 38 issues of 9 popular US women’s fashion magazines. We evaluated target audience, health condition, product availability, message appeal, target to females, and mention of potential side effects and benefits.

Results: Sixty total medication advertisements were identified, 58.3% (95% CI: 45.8, 70.8) for prescription products. In magazines targeted to non-Hispanic Whites, >65% of advertisements were for OTC medications whereas 80% (95% CI: 66.7, 94.5) of advertisements found in Black/Latina magazines were for prescription medications. The rational appeal was used most commonly in non-Hispanic White magazines (75.9%; 95% CI: 60.3, 91.5). Emotional appeal was featured more often in prescription advertisements magazines (60.0; 95% CI:43.8, 76.2) compared to OTC (8.0; 95% CI: -2.6, 18.6).

Conclusion: Although emotional appeal may be effective for selling medication to women, it often does not completely inform consumers of potential risks.

Introduction
The average person living in the United States sees 360 advertisements each day through television, radio, internet, newspapers, and magazines.1 Included in this high volume of product advertisement are targeted strategies to persuade consumers to purchase both over-the-counter (OTC) and prescription medications. Unlike the purchase of OTC products, consumers are not the final decision makers when it comes to prescription medications.2 The ultimate choice of which medication is prescribed lies with the physicians. Traditionally, prescription medication has been marketed exclusively to prescribing physicians and pharmacists. To more actively involve the consumer in the choice of prescription medication and to augment sales by increasing consumer demand, most pharmaceutical companies now utilize direct-to-consumer advertising (DCTA).3

The US Congress has supported several initiatives in an effort to protect consumers with regard to DTCA. Before the regulation of print advertisements, broadcast promotional advertisements for prescription medications were required to include the drug’s chemical and brand names, drug indication, and potential side effects.4 Furthermore, in 1997 the US Food and Drug Administration (FDA) released guidelines that held prescription medication advertisements targeted to both consumers and physicians to the same standards.5 These federal revisions allowed pharmaceutical companies to forgo inclusion of certain information in media advertisements by directly targeting consumers to a physician, website, toll-free telephone number, or full print advertisement, which adversely may have contributed to an increase in DTCA in broadcast media (e.g. TV, radio).6 The legislation on print advertisements for prescription medications has remained unchanged since then and requires a brief summary containing information on who should not take the drug, when the drug should not be taken, possible serious side effects, and what can be done to lower the chances of side effects as well as less serious and frequently occurring side effects.7 Over-the-counter medication advertising (OTCA),
regulated by the Federal Trade Commission, fall under
different standards that require prior substantiation that
an objective claim in the advertisement is true and that the
advertisement is not misleading through misrepresentation
or omitted information. Further, consumers must be
informed about how to avoid harm, or how the benefit of
the OTC medication outweighs consumer harm.4

Women specifically are often targeted by pharmaceuti-
cal companies and have been found to be more easily
persuaded, accepting of claims made in advertisements,
and trusting even after a trust-violation in comparison
to men.5,10 Advertisements targeting emotions may have
greater appeal to women and research literature suggests
that women are more conscious of their emotions than
men, putting greater value on their feelings.11 Emotional
appeal can be used in advertising to establish perceived
benefit of a medication without necessarily including the
health benefit and risk information, resulting in a more
positive perceived benefit of the product or brand.12
Women may also be a more profitable audience to market
to since they are diagnosed with depression and anxiety at
twice the rate as men and are more likely to have a chronic
condition that requires medical attention.13 These fac-
tors in combination with the established fact that women
use more prescription medications in a month than men
make women a prime population to be targeted by DTCA
and OTCA.14

Opinions on medication advertisements vary among
marketing strategists, pharmaceutical companies, con-
sumers and their prescribing physicians depending on
whether the goal is monetary or health-oriented. Cur-
cently, the United States and New Zealand are the only
countries that legally permit DTCA.15,16 Many consumers
believe that DTCA is a resource that aids them in taking a
more active role in their health care and help initiate con-
versations with doctors.2 So persuasive is DCTA that the
majority of individuals who requested a medication from
their doctor after having seen a prescription medication
advertisement were given a prescription for that drug.17
Doctors, however, have often claimed that the advertised
medication requested was not the most effective for a par-
ticular patient and report that DTCA encourages individ-
uals to seek unnecessary treatment.18 These actions may
be contributing to both over-diagnosis of conditions and
over-prescribing of medications.14,19 The requested med-
ications are often more expensive than alternative treat-
ments since these products are marketed for profit and
may not be covered under insurance.20 On the contrary,
some studies have found that DTCA can trigger an indi-
vidual to seek out medical help when they typically would
not have.21,22

The influence of OTCA on consumers has been over-
looked since intake of these medications is often con-
sidered minimal, normal, and does not require the rec-
ommendation and monitoring of intake by a health care
professional.23 Prior studies have determined that unlike
DTCA, OTCA has featured more content regarding the
benefits of a particular products than the risk, omitting
potentially dangerous health consequences,24 an observa-
tion confirmed in our analysis. Overall, less information
is presented through OTCA than DTCA, even though the
targeted consumers are the final decision makers for pur-
chasing these medications.2 Few have hypothesized on the
decision-making process of consumers, resulting in limited
information on consumer attitudes advertisements and
the overall impact of OTCA.22,24

The purpose of this study was to both enumerate and
assess the DTCA and OTCA in women's fashion maga-
azines. Specifically, this study addressed differences found
in magazines marketed to non-Hispanic White, Black, or
Latina women and assessed the presence of marketing
appeals, products marketed specifically to women, and
legally required content for advertisement of prescription
and OTC medications. Information learned from this in-
vestigation will provide insight into the content and style
of advertisements found in women's magazines that po-
tentially influence women's decisions to seek out various
medications.

Materials and Methods

US women's fashion magazines were selected for this anal-
ysis because of the high readership among women aged 27
to 46. This group of women are more likely to have spouses
and children that they make medical decisions for, rep-
resenting the same audience targeted by manufacturers
of pharmaceutical and OTC drugs.25,26 The choice of the
individual fashion magazines reviewed was based on the
readership characteristics publicized by each magazine in
their on-line media kits, indicating a high level of readership
within the targeted age range. A total of 99 issues of 14
popular US women's fashion magazines were reviewed
for medication advertisements.27,28 The selected issues
were published between January and August, 2014. Maga-
nizes were grouped as those marketed predominantly to
non-Hispanic White and those marketed to the African
American and Latina audiences. The majority of maga-
azines targeted a non-Hispanic white women (Allure, Cos-
mopolitan, Elle, Girls Life, Glamour, Marie Claire, Sevent-
teen, Teen Vogue, Vogue) and five of these magazines were
marketed specifically to a Black or Latina audience (Cos-
mo Latina, Ebony, Essence, Jet, Latina). All pages in each
magazine were examined for medication advertisements.

A coding sheet was adapted from previous magazine
analyses.29,30 Advertisements included were paid adver-
tisements (versus products deemed "Editor's Picks" or
featured in editorials/articles) for any medication (pre-
scription or OTC). Product advertisements placed on the
magazine's back cover (but not the front) were included.
These advertisements were categorized on type of product
advertised and those that featured either prescription or
OTC medications were included in analysis. Advertis-
ements related to weight loss, dietary supplements, and
vitamins were not included in the current study as these
products are considered more similar to special foods.29 A
total of 60 advertisements were found in 38 issues from 9
different magazines (Allure, Cosmopolitan, Ebony, Essence,
Glamour, Latina, Jet, Marie Claire, and Vogue). Medica-
tion advertisements were not found in magazines with a
Advertisements were categorized by health condition, as well as if the medication was available by prescription or OTC. Health conditions addressed in advertisements included mental health (depression, nerves), chronic disease management (asthma, cholesterol, diabetes, hepatitis C, high blood pressure, multiple sclerosis), acute conditions (allergies, heartburn, headache/migraine, pain), cold/cough, birth control, physical appearance enhancement (facial injections, eyelash extensions, acne) and vaccines.

The content and message appeal of each advertisement was also determined. Potential message appeals included emotional (showing happiness or peace of mind) and rational appeals (providing information). Whether the produced advertisement was being marketed as exclusively for women was also determined. Lastly, the presence or absence of clear documentation stating the potential side effects and benefits of the advertised prescription and OTC medication was assessed. The kappa for inter-rater reliability of these classifications was determined to be 87.0%, which was determined by recoding 10% of all magazines selected by random number generation.

We conducted descriptive analyses that included testing for associations between content and either intended audience (non-Hispanic White vs. Black/Latina) or product availability (prescription vs. OTC) using chi-square analysis. All analyses were performed using IBM SPSS (version 22). The institutional review boards at William Paterson University, Teachers College, Columbia University, and Lehman College do not review studies that do not involve human subjects research.

### Results

A total of 60 medication advertisements from nine popular US fashion magazines marketed to women were assessed (Table 1). The number of medication advertisements found in a given magazine ranged from 1 to 4, with a median of 1 advertisement (standard deviation [SD] = 0.78). Over 50% (51.7%; 95% CI: 39.1, 64.3) of advertisements appeared in magazines targeted to an ethnic audience (Blacks and Latinas) (51.7%; 95% CI: 39.1, 64.3). Overall, most advertisements were for prescription medications (58.3%; 95% CI: 45.8, 70.8) but differed significantly by the type of audience to which the product was marketed to. Nearly all of the advertisements found in Black and Latina magazines were for prescription drugs (80.6%; 95% CI: 66.7, 94.5) whereas 65.5% (95% CI: 48.2, 82.8) of advertisements in magazines targeted to non-Hispanic White women were for OTC products ($P < 0.0001$).

In this sample, the most common health conditions addressed in advertisements were for cold/cough (23.3%; 95% CI: 12.6, 34.0) and mental health (18.3%; 95% CI: 8.5, 28.1) (Table 1). Advertisements in magazines marketed to non-Hispanic White women followed a similar trend: cold/cough (37.9%; 95% CI: 20.2, 55.6), physical appearance enhancement (27.6%; 95% CI: 11.3, 43.4), and mental health (17.2%; 95% CI: 3.5, 30.9) medications. Significant differences were found in magazines marketed to Black or Latina women vs. those targeting non-Hispanic White women: the most common advertisements in magazines for Black or Latina women were for chronic disease management (25.8%; 95% CI: 10.4, 41.2), followed by birth control (22.6%; 95% CI: 7.9, 37.3) and mental health (19.4%; 95% CI: 5.48, 33.3) medications ($P < 0.0001$).

The majority of advertisements used a rational message appeal to attract consumers (63.3%; 95% CI: 51.1, 75.5) (Table 1). Medication advertising that appealed to the emotions was observed more often in magazines targeting Black and Latina women (54.8%; 95% CI: 37.3, 72.3) compared to magazines geared toward non-Hispanic White women (20.7%; 95% CI: 6.0, 35.5) ($P = 0.007$). Findings suggest that advertisements in magazines targeted to non-Hispanic White women use more rational

### Table 1. Characteristics of magazine sample advertisements by targeted audience (n = 60)

<table>
<thead>
<tr>
<th>Characteristics of magazine sample advertisements</th>
<th>Total No. (%) (95% CI)</th>
<th>Non-Hispanic White No. (%) (95% CI)</th>
<th>Black/Latina No. (%) (95% CI)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Availability of medication</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prescription required</td>
<td>35 (58.3) (45.8, 70.8)</td>
<td>10 (17.2) (7.2, 31.8)</td>
<td>25 (40.0) (28.6, 51.4)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Over the counter</td>
<td>25 (41.7) (29.2, 54.2)</td>
<td>19 (34.5) (17.2, 51.8)</td>
<td>6 (10.0) (0.0, 21.4)</td>
<td></td>
</tr>
<tr>
<td><strong>Health condition</strong></td>
<td></td>
<td></td>
<td></td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Mental health</td>
<td>11 (18.3) (8.5, 28.1)</td>
<td>5 (17.2) (3.5, 30.9)</td>
<td>6 (19.4) (5.48, 33.3)</td>
<td></td>
</tr>
<tr>
<td>Chronic disease management</td>
<td>9 (15.0) (6.9, 24.0)</td>
<td>1 (3.4) (-3.2, 10.0)</td>
<td>8 (25.8) (10.4, 41.2)</td>
<td></td>
</tr>
<tr>
<td>Acute conditions</td>
<td>9 (15.0) (6.9, 24.0)</td>
<td>4 (13.8) (1.3, 26.4)</td>
<td>5 (15.1) (2.5, 27.7)</td>
<td></td>
</tr>
<tr>
<td>Cold/cough</td>
<td>14 (23.3) (12.6, 34.0)</td>
<td>11 (37.9) (20.2, 55.6)</td>
<td>3 (9.7) (-0.7, 20.1)</td>
<td></td>
</tr>
<tr>
<td>Birth control</td>
<td>7 (11.7) (3.6, 19.8)</td>
<td>0 (0.0) (-1.2, 1.2)</td>
<td>7 (22.6) (7.9, 37.3)</td>
<td></td>
</tr>
<tr>
<td>Physical appearance enhancement</td>
<td>8 (13.3) (4.7, 21.9)</td>
<td>8 (27.6) (11.3, 43.4)</td>
<td>0 (0.0) (-1.2, 1.2)</td>
<td></td>
</tr>
<tr>
<td>Vaccines</td>
<td>2 (3.3) (1.2, 7.8)</td>
<td>0 (0.0) (-1.2, 1.2)</td>
<td>2 (6.5) (-2.2, 15.2)</td>
<td></td>
</tr>
<tr>
<td><strong>Marketing appeal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional appeal</td>
<td>23 (38.3) (26.0, 50.6)</td>
<td>6 (20.7) (6.0, 35.5)</td>
<td>17 (54.8) (37.3, 72.3)</td>
<td>0.007</td>
</tr>
<tr>
<td>Rational appeal</td>
<td>38 (63.3) (51.1, 75.5)</td>
<td>22 (75.9) (60.3, 91.5)</td>
<td>16 (51.6) (34.0, 69.2)</td>
<td>0.051</td>
</tr>
</tbody>
</table>

* Groups not mutually exclusive.
appeal (75.9%; 95% CI: 60.3, 91.5) compared to those in magazines for Black and Latina women (51.6%; 95% CI: 34.0, 69.2).

In comparing prescription medication advertisements to OTC, the emotional appeal was featured more often in advertisements for medications that required a prescription (60.0; 95% CI: 43.8, 76.2) than those that did not (8.0; 95% CI: -2.6, 18.6) (Table 2). Rational appeal was used in nearly all advertisements for OTC medications (92.0%; 95% CI: 81.4, 102.6) compared to less than half of advertisements for prescription medications (42.9%; 95% CI: 26.5, 59.3) (P < 0.0001). Almost all advertisements contained information on the benefits (96.7%; 95% CI: 92.2, 101.2) and possible side effects (93.3%; 95% CI: 87.0, 99.6) of the medication advertised. OTC advertisements were also more likely to be marketed exclusively for women (12.0%; 95% CI: -0.7, 24.7) than prescription medications (48.6%; 95% CI: 32.0, 65.2) (P = 0.003).

**Discussion**

The majority of medications advertised to women were for products only available with a prescription. More OTC advertisements were featured in magazines targeted to Black/Latina women than magazines targeting non-Hispanic White women. This may be explained by the greater number of advertisements for chronic disease management and birth control found in these magazines. Compared to magazines sold to Black or Latina women, magazines marketed to non-Hispanic White women contained significantly more advertisements for cold/cough medications and products for changing physical appearance, many of which are available OTC. Of particular interest were the differences in marketing appeals used in advertisements targeted to women of different ethnicities. Emotional appeal was more than twice as likely to be used in advertisements found in Black or Latina magazines while rational appeal was used 50% more frequently in non-Hispanic White magazines.

Similar to the findings of others, the greatest number of medication advertisements in our sample was found in magazines targeted to Black women. Research indicates that magazines targeted to Black women less often contain advertisements for joint pain and high cholesterol, however, over 25% of the advertisements found in magazines aimed at the ethnic market were for chronic disease management. The only advertisements found in magazines marketed specifically to Latina women were for acute conditions and cold/cough, which is consistent with findings demonstrating that Hispanic Americans use considerably fewer prescription products overall than non-Hispanic White Americans, regardless of health conditions. Given this lack of expenditure and that Hispanic Americans are the largest minority group in the United States, there currently exists a large, underutilized audience that companies may look to target. This is of particular concern since research has found that Hispanic Americans rely more on DTC advertising than non-Hispanic White Americans and are less skeptical of claims.

This study was limited by the number of advertisements used in analysis. This limited sample size still reflected the audience targeted by manufacturers of pharmaceutical and OTC products based on age range. The convenience sampling strategy may have introduced selection biased based on availability of magazines. However, regardless of where the issues were purchased, the magazines marketed to non-Hispanic white, Black, and Latina women, respectively, had the highest circulation of fashion magazines in the United States within their targeted demographic group. Future studies should include magazines of various genres specifically targeted to women in order to improve sample size and to limit this potential bias.

**Conclusion**

The present study found that women of different ethnic backgrounds are not targeted similarly by pharmaceutical companies through advertisements in women’s fashion magazines. While health conditions may vary between ethnic groups, differences still exist in message appeals and product availability. Black or Latina women are more

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**Table 2. Advertisement content by prescription requirement (n = 60)**

<table>
<thead>
<tr>
<th>Benefits described</th>
<th>Total No. (%)</th>
<th>Prescription required No. (%)</th>
<th>OTC No. (%)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Possible side effects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>56 (93.3) (87.0, 99.6)</td>
<td>35 (100.0) -</td>
<td>21 (84.0) (69.6, 98.4)</td>
<td>0.014</td>
</tr>
<tr>
<td>No</td>
<td>4 (6.7) (0.4, 13.0)</td>
<td>0 (0.0) -</td>
<td>4 (16.0) (1.6, 30.4)</td>
<td></td>
</tr>
<tr>
<td>Benefits described</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>58 (96.7) (92.2, 101.2)</td>
<td>34 (97.1) (91.5, 102.7)</td>
<td>24 (96.0) (88.3, 103.7)</td>
<td>0.808</td>
</tr>
<tr>
<td>No</td>
<td>2 (3.3) (1.2, 7.8)</td>
<td>1 (2.9) (-2.7, 8.5)</td>
<td>1 (4.0) (-3.7, 11.7)</td>
<td></td>
</tr>
</tbody>
</table>

Abbreviation: Over-the-counter.

a Groups not mutually exclusive.
likely to be targeted by pharmaceutical companies through emotional appeal than non-Hispanic White women. Additionally, prescription drugs were advertised mainly with emotional appeal while OTC medications featured rational appeal. Although this type of appeal may be effective for selling a product, it often does not completely inform consumers of potential risks. Future studies should expand on the differences to better understand the influence of both DTCA and OTCA on women. Additionally, further research should be done to evaluate the attitudes of consumers towards claims made in advertisements, especially those for medications that are not regulated by medical professionals. Understanding the influence of these types of advertisements on potential consumers can promote conversations between health care workers and patients to better understand possible risks.

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Not applicable

Competing interests
None.

Authors’ contributions
JM conceived the research hypothesis, performed analysis, and assisted in manuscript preparation. CHB, GCH, and DE collected the data and assisted in manuscript preparation.

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None.

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