Direct-to-Consumer Advertising of Prescription Drugs—Review of Literature Relating to Population Subsets

Eastern Research Group, Inc.

Lexington, MA

DTCA and Subsets of the Population

Who are underserved populations?

Groups studied in DTCA research:

- Elderly
- African-Americans, Hispanics, and other racial or ethnic minorities
- Lower income level
- Lower education level
- Lower English literacy

Note: Research on DTCA impacts on **children's health** is limited.

Top 20 Pharmaceutical Products in Terms of Spending on Direct-to-Consumer Advertising in 2005

(from Donohue et. al. 2007, Table 3)

Table 3. Top 20 Pharmaceutical Products in terms of Spending on Direct-to-Consumer Advertising in 2005

Drug	Company	Therapeutic Category	Spending *millions of dollars*	FDA Approval Date	Year that Campaign Started
Nexium (esomeprazole	AstraZeneca	Proton-pump inhibitor	224	Feb. 2000	2001
Lunesta (eszopiclone)	Sepracor	Hypnotic–sedative	214	Dec. 2004	2005
Vytorin (ezetimibe–Simvastatin)	Merck/Schering-Plough	Cholesterol absorption Blocker–HMG-GoA Reductase inhibitor	155	July 2004	2004
Crestor (rosuvastatin)	AstraZeneca	HMC-CoA reductase inhibitor	144	Aug. 2003	2004
Advair (fluticasone and Salmeterol)	GlaxoSmithKline	Corticosteroid–β-adrenergic–receptor agonist	137	Aug. 2000	2001
Nasonex (mometasone)	Schering-Plough	Corticosteroid	124	Dec. 1997	1998
Flonase (fluticasone)	GlaxoSmithKline	Corticosteroid	111	Oct. 1994	1995
Lamisil (terbinafine)	Novartis	Allylamine antifungal	110	May 1996	1997
Plavix (clopidogrel)	Bristol-Myers Squibb/Sanofi	Platelet-aggregation Antagonist	110	Nov. 1997	2001
Cialis (tadalafil)	Lilly ICOS	PDE5 inhibitor	110	Nov. 2003	2004
Wellbutrin XL (bupropion)	GlaxoSmithKline	Dopamine reuptake inhibitor–SNRI	108	Aug. 2003	2004
Singulair (montelukast)	Merck	Leukotriene D4–receptor Antagonist	105	Feb. 1998	1998
Lipitor (atorvastatin)	Pfizer	HMG-CoA reductase Inhibitor	93	Dec. 1996	1998
Ambien (zolpidem)	Sanofi-Aventis	hypnotic–sedative	88	Sept. 2005	2005
Humira (adalimumab)	Abbott	Monoclonal antibody	88	Dec. 2002	2003
Imitrex (sumatriptan)	GlaxoSmithKline	Vascular 5-HT1–receptor agonist	82	Aug. 1997	1998
Viagra (sildenafil)	Pfizer	PDE5 inhibitor	80	Mar. 1998	1998
Neulasta (pegfilgrastim)	Amgen	G-CSF analogue	74	Jan. 2002	2002
Valtrex (valacyclovir)	GlaxoSmithKline	DNA polymerase inhibitor	72	June 1995	1996
Prevacid (lansoprozole)	TAP	Proton-pump inhibitor	71	May 1995	2000

U.S. Population Subsets

U.S. Census 2006 American Community Survey

Adult U.S. population:
75.4% (225,746,000) ≥18 years

- **Elderly/Seniors**
  - **17%** (50,983,000) ≥ 60 years.
  - **6.1%** (18,293,000) ≥ 75 years.

- **Race, Ethnicity, and Language**
  - **66.2%** White (non-Hispanic or Latino)
  - **14.8%** Hispanic or Latino
  - **12.4%** Black or African American
  - **4.4%** Asian
  - **8.7%** speak English less than very well.

(Census, 2008)

U.S. Population Subsets

U.S. Census 2006 American Community Survey:

225,746,000 people ≥18 years

- **Household Income**
  - $15,000 - $24,999-11.4%
  - $25,000- $34,999- 11.2%
  - $35,000- $49,999- 14.8%
  - $50,000- $74,999- 19.0%
  - $75,000- $99,999- 11.8%
- **Median Household Income by Race**
  - White $52,375
  - Asian $63,642
  - Hispanic or Latino $38,747
  - American Indian and Alaska Native $33,762
  - Black or African American- $32,372

U.S. Population Subsets

U.S. Census 2006 American Community Survey:

225,746,000 people ≥18 years

- **Education Level (over 18 years)**
  - **16.2%** non-high school graduate
  - **30.7%** high school graduate
  - **24.6%** Bachelor's degree or higher
- **Poverty Rate and Median Income by Education (over 25 years)**
  - **23.7%** non-high school graduate—**$18,641**
  - **11.5%** high school graduate—**$26,123**
  - **4.1%** bachelor's degree—**$45,221**
  - **3.1%** graduate or professional degree—**$59,804**

Comparing underserved populations with the general population:

- What data have been reported regarding DTCA and U.S. consumers?
- What data have been reported regarding DTCA and underserved populations?
- Are there differences in exposure to, attitude toward, comprehension of, and behavior in response to DTCA?

Exposure to DTCA

General Population

- **96%** percent report having seen at least one DTCA (Prevention, 2004).
- **83%** saw DTCA in previous 12 months (Murray et al., 2004).

Population Subsets

- **93%** of subjects ≥**60** years have seen at least one DTCA (Prevention 2004).
- **88%** of subjects ≥**60** years have seen DTCA on TV (Marinac et al. 2004).
- **90%** of subjects ≥**50** years have seen a DTCA (Barrett, 2005).

Exposure to DTCA

General population

- **91%** have seen or heard some type of DTCA (Kaiser, 2008).
- **81%** have seen or heard a DTCA for prescription drugs in the past 30 days (Consumer Reports, 2008).

Population Subsets

- **76%** of African-American patients* in doctors' waiting rooms had seen a DTCA in previous two months (Allison-Ottey et al., 2003).

*sample was 91% African-American, 5% Hispanic

Behavioral Response to DTCA—Talking to Physicians

General Population

- **32%** of DTCA-exposed consumers talked to a physician about DTCA drug; **8.3%** of exposed consumers asked for a prescription (Prevention, 2004).
- **12%** of exposed subjects talked to physician about information in a DTCA (Murray et al., 2004).

Population Subsets

- **27% of DTCA-exposed subjects ≥60 years talked to physician about DTCA drug; 4.1% asked for a prescription** (Prevention, 2004).
- **18% of exposed subjects ≥50 years asked physician for DTCA prescription** (Barrett, 2005).
- **5% of subjects asking physician about DTCA drug were ≥75 years. They were less likely (OR=.58) to make RX requests than other groups.** (Datti and Carter, 2006).

Behavioral Response to DTCA—Talking to Physicians

General Population

- **22%** of high school graduates or higher scheduled a physician visit in response to DTCA (Murray et al., 2004).
- **32%** of exposed subjects (29.1% of all) asked physician about the specific drug they saw advertised (Kaiser, 2008).

Population Subset

- **58%** of high school non-graduates scheduled a physician visit in response to DTCA (Murray et al., 2004).

Behavioral Response to DTCA—Talking to Physicians

General Population

- **31%** of DTCA-exposed patients asked physician about DTCA drug (Datti and Carter, 2006).
- **33%** of subjects who had a question for their physician were prompted by a TV ad, **19%** by a print ad (Aikin et al., 2004).

Population Subsets

- **c. 29%** of African-American patients* in doctors' waiting rooms said they had once asked physician for DTCA prescription (Allison-Ottey, et al. 2003).*sample was 91% African-American, 5% Hispanic.
- Odds of African-Americans requesting a DTCA prescription were **58% higher** than survey counterparts (Datti and Carter, 2006).

Physician Responses to Patient Requests

General Population

- **84%** of direct DTCA prescription requests granted by physicians (**7.0%** of all DTCA-exposed subjects), (Prevention, 2004).
- **50%** of patients discussing DTCA drug were given a prescription—**25%** for DTCA drug, **25%** for another drug. Equals **10.9%** of all DTCA-exposed subjects (Prevention, 2004).

Population Subsets

- **5%** of subjects receiving a DTCA prescription were ≥75 years. (Datti and Carter, 2006).
- **51%** of patients ≥50 years requesting DTCA drug (**8.3%** of all subjects ≥50 years) were given prescription by physician (Barrett, 2005).

Physician Responses to Patient Requests

General Population

- **58%** of high school graduates and higher requesting DTCA-inspired "intervention" received what they requested (Murray et al., 2004).
- **63% of** white subjects requesting DTCA-inspired "intervention" received what they requested (Murray et al., 2004).

Population Subsets

- **29%** of non-high school graduates requesting DTCA-inspired "intervention" received what they requested (Murray et al., 2004).
- **30%** of non-white subjects requesting DTCA-inspired "intervention" received what they requested (Murray et al., 2004).

Physician Responses to Patient Requests

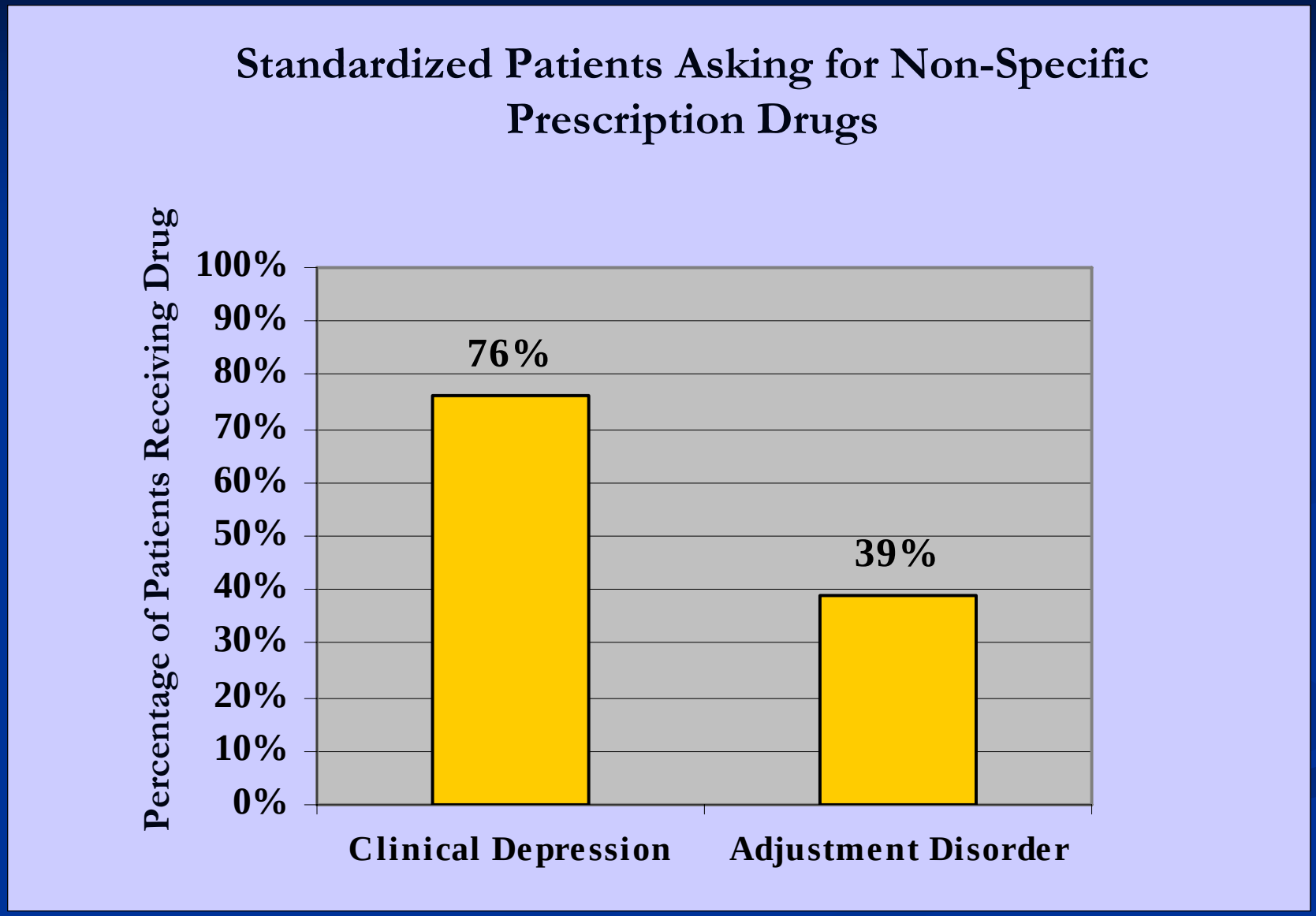
General Population

- **69%** of subjects asking about DTCA drug received a prescription (Datti and Carter, 2006).
- **44%** of patients discussing DTCA (**14.1%** of all DTCA-exposed subjects) received the specific prescription (Kaiser, 2008).

Population Subsets

- c. 28% of African-American patients* who had ever asked for DTCA drug (8.1% of all subjects) were given Rx (Allison-Ottey et al., 2003). *sample was 91% African-American, 5% Hispanic.
- Odds of African-Americans receiving prescription were **63% lower** than other subjects (OR=0.37) (Datti and Carter, 2006)

What happens when patients ask doctors for drugs? (Kravitz et al., 2005)



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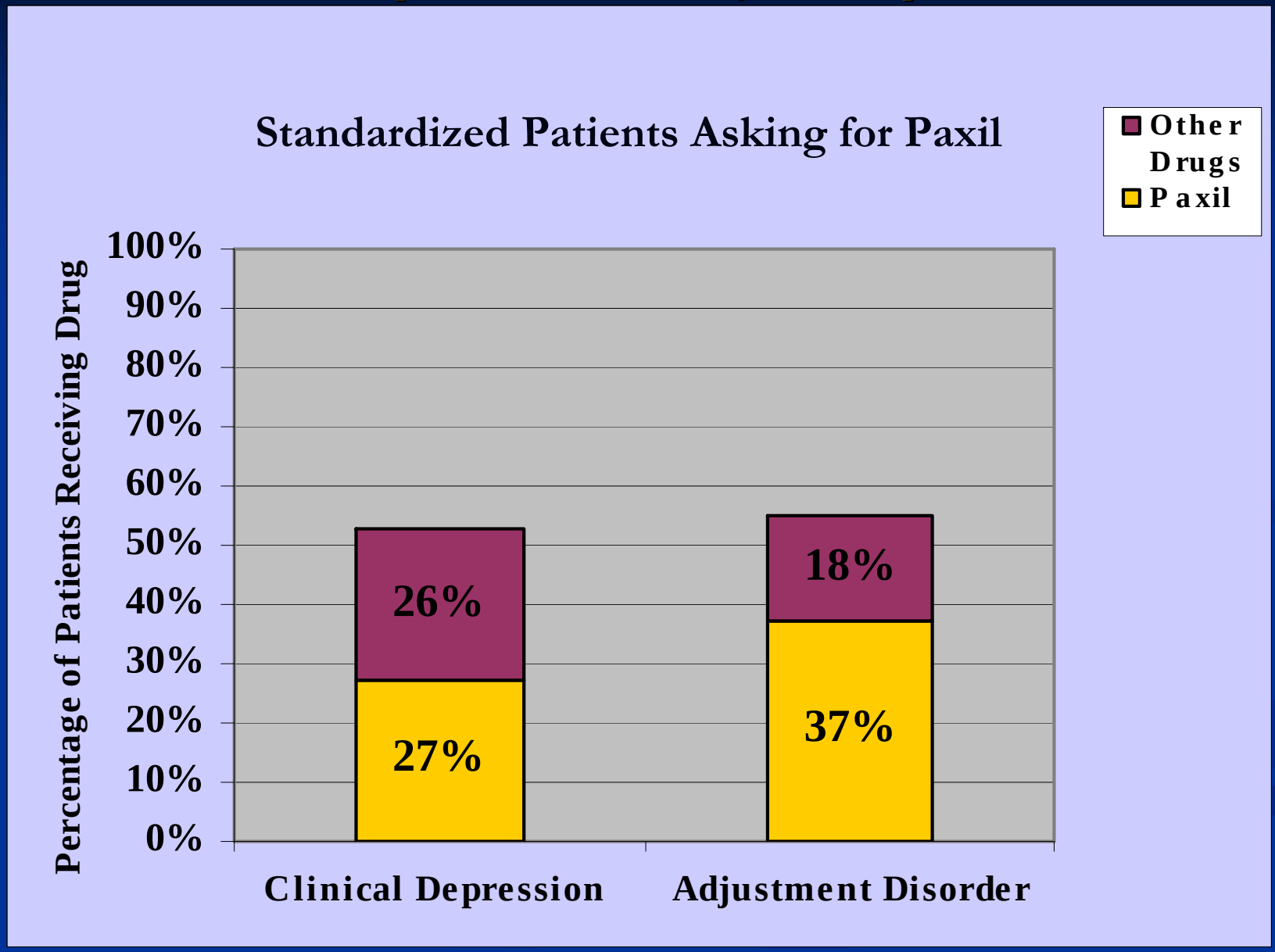

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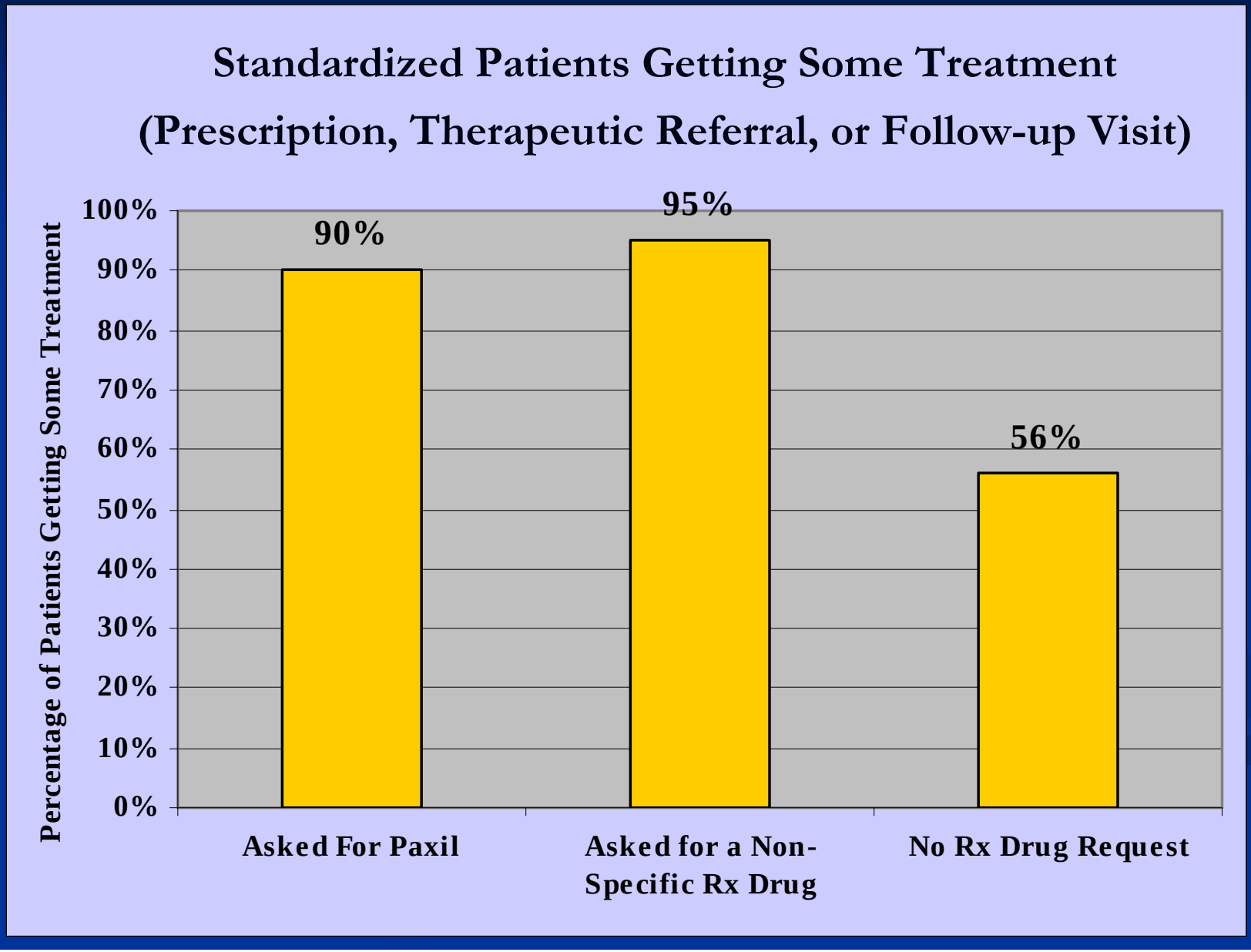

Perception of Risks and Benefits

General Population

- Consumers overestimate side effect rates by up to **10 times** when no risk data is given in DTCA (Young and Oppenheimer, 2006).
- The presentation of specific, numerical risk data in DTCA correlates to reduced fear levels and increased intention to comply with the drug regimen (Young and Oppenheimer, 2006).

Population Subsets

- A mean of **59%** of true-false comprehension questions about recently-viewed DTCAs were answered correctly by limited English literacy subjects. (Kaphingst et al., 2005). Odds of risk questions being correctly answered were lower than for benefits.

Perception of Risks and Benefits

General Population

- **36%** of high school graduates, **28%** with some college, and **23%** of college graduates said DTCA provided enough information to make a risk/benefit decision (Prevention, 2004).
- **7%** of prescription drug users stopped taking their prescription after viewing a DTCA, and **7%** switched to an OTC medication (Prevention, 2004).

Population Subsets

- **43%** of non-high school graduates said DTCA provided enough information to make a risk/benefit decision. (Prevention, 2004).
- **71%** of consumers with high school degrees or less can comprehend numerical risk/benefit data presented in an experimental benefits table for print DTCAs (Schwartz et al., 2007).
- Subjects with high school degrees or less understood a "drug facts box" slightly less than those with at least some college (Schwartz et al., 2007)

Perception of Risks and Benefits

General Population

- Subjects told side effect is "common" estimated their own probability of suffering side effect at 56.6% versus actual rate of 6%. (Berry et al., 2003).
- Subjects given actual numerical side effect rate (6%), then asked what their probability of suffering side effect was, gave mean response of 19.9% (Berry et al., 2003).

Population Subsets

- **60%** of seniors in a Kansas City-area survey reported that DTCA were often confusing and difficult to understand (Marinac et al., 2004).

Perception of Risks and Benefits

General Population

- **59%** of national adults recall some knowledge about risks associated with DTCA (Prevention 2007).
- Risks are recited nearly **50% faster than benefits** in a sample of television DTCAs (Kaphingst et al., 2004).
- **91%** of a sample of television DTCAs recite risks faster than benefits (Kaphingst et al., 2004).

DTCA and Children

Research data on DTCA and children's health is limited.

- **16%** of U.S. adults provide medical care for children for a specific condition, **56%** for ADD/ADHD (Prevention 2004).

- **40%** of caregivers for children have talked to physician about DTCA drug for others, vs. **18%** of all caregivers (Prevention 2004).

DTCA and Children

- Subjects with one child ≤18 years were **13%** more likely to request DTCA drug from a physician than others (Datti and Carter, 2006). Odds increased by 13% with each additional child.

- DTCA for depression and ADHD may de-stigmatize and "legitimate" these and other disorders (Feinberg, 2005).

DTCA and the Internet

- **5** million consumers import drugs from outside the U.S. via pharmaceutical Web sites, according to PHRMA survey (Hoffman 2007).
- **2** million do so without a prescription.
- Price was given as the primary reason (**85%**).
- Most Web-imported drugs were antibiotics for infections, and drugs to treat allergies, pain, digestive problems, hypertension, and high cholesterol.

Population Subsets and DTCA: Summary

- Population subsets see as much DTCA as others.
- Population subsets differ in their responses to DTCA:
  - Seniors tend to request prescriptions less often.
  - Seniors requesting prescription medication from physicians are likely to be referred for further treatment.

Population Subsets and DTCA: Summary

- African-Americans tend to request prescriptions more often than other groups.
- African-Americans apparently do not receive requested prescriptions as often as other groups.

Population Subsets and DTCA: Summary

- People with high school or less education view DTCA more favorably.
- People with high school or less education are more likely to agree that DTCA provides enough information to decide if drug benefits outweigh the risks.

Population Subsets and DTCA: Summary

- Physicians may provide treatment and prescriptions more frequently to patients that request drugs than to those who do not.
- Consumers may overestimate a drug's risks when given either vague or specific risk information.

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