Pharmacists’ Attitudes Toward and Practices With Adolescents

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Background: Adolescents often face barriers to health care. As pharmacists’ scope of practice expands, they may be in positions to decrease barriers to care for adolescents.

Objective: To describe pharmacists’ attitudes toward and practices with adolescents.


Setting: All active, licensed pharmacies in Indiana were surveyed.

Participants: Nine hundred forty-eight surveys (70%) were returned. Sixty-five percent of responding pharmacists were male, 54% were younger than 45 years, and 58% had been practicing for more than 15 years; 47% practiced in areas with fewer than 30000 people.

Main Outcome Measures: Pharmacists’ attitudes toward and practices with adolescents.

Results: The majority of pharmacists (94%) dispensed prescriptions for adolescents, but 57% felt inadequately trained in adolescent-specific issues. Forty-eight percent of pharmacies did not dispense emergency contraception. Pharmacists were more likely to report dispensing contraceptives directly to 17-year-olds than to 14-year-olds, and were more likely to report contacting a parent or provider before dispensing contraceptives to 14-year-olds.

Conclusions: Adolescents often require pharmacy services, but many pharmacists feel inadequately trained in adolescent-specific issues. Confidentiality may not be maintained by all members of the health care team, and a prescription may be refused by the receiving pharmacist. Younger adolescents may face more barriers to care than older adolescents. Increasing pharmacists’ knowledge and skills in adolescent issues, especially confidentiality, may decrease barriers to care and improve adolescent health outcomes.


PHARMACISTS’ SCOPE OF PRACTICE IS EXPANDING TO INCLUDE ROLES AS PHARMACEUTICAL CARE PROVIDERS. PHARMACEUTICAL CARE IS PATIENT-CENTERED, OUTCOME-ORIENTED PHARMACY PRACTICE THAT IS DESIGNED TO ASSESS, INITIATE, MONITOR, AND MODIFY MEDICATION TO ENSURE THAT DRUG THERAPY REGIMENS ARE SAFE AND EFFECTIVE. MANY CONTEMPORARY PHARMACISTS ENTER INTO COLLABORATIVE CARE AGREEMENTS WITH PHYSICIANS, WHERE PHARMACISTS COMPLETE SOME PATIENT MANAGEMENT RESPONSIBILITIES TRADITIONALLY CONDUCTED BY PHYSICIANS. THIS EXPANDING ROLE OF PHARMACISTS CREATES OPPORTUNITIES FOR THEM TO ASSIST IN THE PROVISION OF SEVERAL TYPES OF HEALTH SERVICES FOR ADOLESCENTS.

PHARMACISTS ARE IN A UNIQUE POSITION TO ASSIST ADOLESCENTS DURING THE DEVELOPMENTAL PROCESS, WHICH INCLUDES ASSUMING INCREASED HEALTH CARE AUTONOMY, OFTEN REQUIRING Confidential SERVICES. AS CONSUMERS OF PHARMACY SERVICES, ADOLESCENTS HAVE UNIQUE NEEDS THAT MAY GO UNMET. PHARMACISTS ARE VISIBLE, ACCESSIBLE PROFESSIONALS, AND MAY REPRESENT THE ONLY OR LAST ENCOUNTER BETWEEN AN ADOLESCENT AND A MEMBER OF THE HEALTH CARE TEAM.

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FEW STUDIES ADDRESS PHARMACISTS’ TRAINING IN ADOLESCENT HEALTH OR THEIR INTERACTIONS WITH ADOLESCENT PATIENTS. MANY PHARMACISTS MAY HAVE MISINFORMATION ABOUT MEDICATIONS SUCH AS EMERGENCY CONTRACEPTION THAT SHOULD BE AVAILABLE FOR ADOLESCENTS. A RECENT SURVEY REPORTED THAT 50% OF PHARMACISTS JUDGED EMERGENCY CONTRACEPTION TO BE UNSAFE FOR ADOLESCENTS, 50% BELIEVED CONTRACEPTIVE PILLS CAUSE BIRTH DEFECTS IF TAKEN DURING PREGNANCY, AND 55%
agreed that repeated use of emergency contraception may pose health risks.2 Even among pharmacists adequately trained to provide emergency contraception, many report inadequate training in dealing with parents’ inquiries about provision of emergency contraceptive services to their children.3 Adequate training in consent and confidentiality issues, as well as training about health products used by adolescents, is especially important as pharmacists’ scope of practice continues to increase.4

We sought to describe pharmacists’ attitudes, dispensing practices, and perceived adequacy of training related to adolescent patients. Specific attention was given to provision of reproductive health services such as contraceptives. Such information is necessary to identify relevant issues in adolescent health needed for the education and training of pharmacists.

A list of licensed pharmacies was purchased from the Indiana Health Professions Bureau. Pharmacies identified as “closed” were excluded. Pharmacies with 2 or more licenses received only one set of study materials. Study materials were mailed to the “chief pharmacist” at 1361 active, licensed pharmacies. A cover letter described the purpose of the research and assured anonymity. Written, informed consent was not obtained because the respondents remained anonymous and survey return was accepted as consent. The research protocol was approved by the Indiana University/Purdue University at Indianapolis and Clarian Institutional Review Board.

Survey items were developed by a licensed pharmacist-physician (L.A.E.C.) and pilot tested with 5 pharmacists working in varied practice settings. The instrument was revised after pilot testing, primarily to improve focus and clarity. A token $1 incentive was included in each survey. An initial survey mailing was followed by a second mailing (3 weeks later) to initial nonresponders. No information was available for nonresponders.

The survey instrument assessed pharmacy characteristics, responding pharmacist characteristics, and pharmacists’ dispensing practices with adolescent patients. Pharmacy characteristics included population of the town or city of the pharmacy, provision of direct patient services, type of patients served (inpatients or outpatients), availability of private counseling space, and frequency of prescription dispensing to adolescents.

Responding pharmacist characteristics included age, sex, most advanced pharmacy degree (eg, bachelor’s degree or doctor of pharmacy), years in pharmacy practice, and perceived adequacy of training in adolescent health issues. Additional items assessed attitudes and practices about contraceptive dispensing for adolescent clients. Pharmacists were asked about practices regarding dispensing emergency contraception, types of emergency contraception stocked, and level of comfort in dispensing emergency contraception to adolescents. In addition, pharmacists were asked how often adolescents ask questions about prescription medications, over-the-counter preparations, and medical devices.

Practices related to reproductive health services with adolescents were assessed by means of 4 case scenarios. In each scenario, a young woman entered the pharmacy alone with one of the following prescriptions: Ortho-Cyclen (ethinyl estradiol and norgestimate; Ortho Pharmaceutical Corp, Raritan, NJ), a common oral contraceptive; Ovral (ethinyl estradiol and norgestrel; Wyeth Pharmaceuticals, Philadelphia, Pa), an oral contraceptive in emergency contraception dosing; Premarin (conjugated estrogens; Wyeth Pharmaceuticals) for breakthrough bleeding with injectable progestin contraceptives; or Accutane (isotretinoin; Roche Pharmaceuticals, Nutley, NJ), an acne medication with known teratogenicity. This study was completed before recent changes in Accutane dispensing, known as the System to Manage Accutane Related Teratogenicity (SMART), were put into effect. With the SMART program, physicians who prescribe Accutane must have completed a training program and must place a sticker on an Accutane prescription to notify the pharmacist that a female patient meets the criteria to be treated with Accutane (including having 2 negative pregnancy tests and using 2 forms of birth control).3 Trade names were used instead of generic names, since there are many generic formulations available for some of the products. Also, many prescriptions are written by trade name. For each scenario, pharmacists were asked to report separately for a 14-year-old patient and a 17-year-old patient. Response alternatives for each scenario included “dispense,” “contact the parent or ask that the parent pick up the prescription,” or “contact the provider prior to dispensing.” Additional space for explanation or comment was provided for each scenario.

Ten percent of the surveys were double-entered as an accuracy check. No errors were noted. The double entries were not used in the data set. Initial data analyses included inspection for outliers, obvious data entry errors, and univariate distributions. Data analyses were conducted with SPSS (SPSS Inc, Chicago, Ill). Summary statistics and associations between categorical variables were determined by the Pearson χ². Statistical significance was defined as P<.05.

Of the 1361 mailed surveys, 956 were completed and returned. Eight returned surveys were duplicates and were excluded, leaving a final sample of 948 (response rate of 70%). Among nonrespondents, 41 surveys were returned uncompleted and 15 were returned as undeliverable; 349 surveys were not returned.

Forty-seven percent of the pharmacies were located in an area with a population less than 30000. Ninety-three percent of pharmacists reported direct patient contact, and 94% filed prescriptions for adolescent patients. Eighty-eight percent reported dispensing medication to outpatients and 17% reported dispensing to inpatients. Forty-seven percent reported lack of private space for confidential discussions with patients (data not shown).

Sixty-five percent of the respondents were male, and 54% were younger than 45 years. Race and ethnicity were not surveyed. Fifty-eight percent had been practicing pharmacy for more than 15 years, and most (89%) reported a bachelor’s degree in pharmacy as their most advanced degree (Table 1).

Several survey items addressed training around adolescent issues. Respondents were asked if they felt that they had been well trained in certain areas in pharmacy school (Table 2). Thirteen percent agreed that they had been well trained in adolescent-specific issues, 7% agreed that they had been well trained in adolescent consent issues, and 23% agreed that they had been well trained in adolescent confidentiality issues. Pharmacists younger than 45 years were more likely to agree that they had been well trained in adolescent-specific issues (χ²=55.9, [*H11021*P*/H11021*=.001), adolescent consent issues (χ²=32.7, [*H9273*P*/H9273*<.001), and adolescent confidentiality issues (χ²=55.3, [*H9273*P*/H9273*<.001).
There were no differences in response on the basis of sex or population where the site was located.

Forty-eight percent of pharmacies did not dispense emergency contraception in any form. Forty-eight percent stocked oral contraceptives for use as emergency contraception, and 22% stocked more than one type of emergency contraception (usually oral contraceptives and one or more specific brands of emergency contraceptives). Pharmacists younger than 45 years were significantly more likely to state that they dispensed emergency contraception (usually oral contraceptives and one type stocked oral contraceptives for use as emergency contraception). Male pharmacists were again more likely than female pharmacists to believe that adolescents ask questions about over-the-counter products. This response did not differ by age of the pharmacist or population where the site was located.

Fifty percent stated that adolescents sometimes or often ask questions about over-the-counter products. This response differed by the pharmacist’s sex ($\chi^2=13.4, P=.009$) and population ($\chi^2=28.9, P=.004$), but not by pharmacist’s age. Male pharmacists were again more likely than female pharmacists to believe that adolescents ask questions. Pharmacists in less-populated areas were more likely to say that adolescents ask questions about over-the-counter products.

Only 29% of pharmacists stated that adolescents sometimes or often ask about medical devices. This response differed by population ($\chi^2=35.6, P<.001$) but not by pharmacist’s age or sex. Again, pharmacists in rural areas were more likely to believe that adolescents ask questions. For both over-the-counter preparations and medical devices, pharmacists in areas where the population was greater than 100,000 were more likely to say that they do not sell these products.

The case scenarios indicated that pharmacists were significantly more likely to dispense contraceptives and reproductive health–related products directly to 17-year-olds than to 14-year-olds and were significantly more likely to contact a parent before dispensing these medications to 14-year-olds (Table 4). Nine percent of respondents would contact a parent before dispensing Or-

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Table 1. Demographic Characteristics of Pharmacists

<table>
<thead>
<tr>
<th>Age, y</th>
<th>No. (%)*</th>
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<tbody>
<tr>
<td>&lt;25</td>
<td>16 (2)</td>
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<tr>
<td>25-34</td>
<td>255 (27)</td>
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<tr>
<td>35-44</td>
<td>237 (25)</td>
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<tr>
<td>45-54</td>
<td>286 (30)</td>
</tr>
<tr>
<td>55-64</td>
<td>131 (14)</td>
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<tr>
<td>≥65</td>
<td>21 (2)</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>617 (65)</td>
</tr>
<tr>
<td>Female</td>
<td>326 (35)</td>
</tr>
<tr>
<td>Years in pharmacy practice</td>
<td></td>
</tr>
<tr>
<td>&lt;1</td>
<td>10 (1)</td>
</tr>
<tr>
<td>1-5</td>
<td>126 (13)</td>
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<tr>
<td>6-10</td>
<td>144 (15)</td>
</tr>
<tr>
<td>11-15</td>
<td>123 (13)</td>
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<tr>
<td>≥16</td>
<td>545 (58)</td>
</tr>
<tr>
<td>Type of degree</td>
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<tr>
<td>Bachelor’s</td>
<td>842 (89)</td>
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<tr>
<td>Other advanced degree</td>
<td>106 (11)</td>
</tr>
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</table>

*Because of missing data, numbers may not total 948. Because of rounding, percentages may not total 100.

Table 2. Attitudes Toward Training in Adolescent Care*

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree Nor Disagree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
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</thead>
<tbody>
<tr>
<td>Well trained in adolescent-specific issues</td>
<td>9 (1)</td>
<td>104 (12)</td>
<td>267 (30)</td>
<td>410 (46)</td>
<td>97 (11)</td>
</tr>
<tr>
<td>Well trained in adolescent consent issues</td>
<td>7 (1)</td>
<td>57 (6)</td>
<td>190 (21)</td>
<td>477 (54)</td>
<td>154 (17)</td>
</tr>
<tr>
<td>Well trained in adolescent confidentiality issues</td>
<td>39 (4)</td>
<td>168 (19)</td>
<td>204 (23)</td>
<td>367 (41)</td>
<td>107 (12)</td>
</tr>
</tbody>
</table>

*Data are given as numbers (percentages). Because of rounding, percentages may not total 100.

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Table 3. Pharmacists’ Perceptions of Adolescents’ Question Asking

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Adolescents ask about over-the-counter medications</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>48 (5)</td>
<td>345 (52)</td>
<td>325 (39)</td>
<td>31 (4)</td>
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<tr>
<td>Adolescents ask about over-the-counter medications</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>35 (4)</td>
<td>342 (41)</td>
<td>377 (45)</td>
<td>44 (5)</td>
<td></td>
</tr>
<tr>
<td>Rarely</td>
<td>477 (54)</td>
<td>224 (27)</td>
<td>16 (2)</td>
<td>55 (7)</td>
<td></td>
</tr>
<tr>
<td>Adolescents ask about medical devices</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>97 (12)</td>
<td>441 (53)</td>
<td>21 (2)</td>
<td>55 (7)</td>
<td></td>
</tr>
<tr>
<td>Rarely</td>
<td>164 (17)</td>
<td>78 (8)</td>
<td>10 (1)</td>
<td>12 (1)</td>
<td></td>
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<tr>
<td>Adolescents ask about medical devices</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>3 (1)</td>
<td>34 (5)</td>
<td>7 (1)</td>
<td>1 (1)</td>
<td></td>
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</tbody>
</table>

*Because of rounding, percentages may not total 100.
Pharmacists’ scope of practice is increasing, and pharmacists have interactions with adolescents. Although there is very little information available on the interactions between pharmacists and adolescents, several studies have suggested that pharmacists may be uncomfortable with or lack knowledge about issues that occur with adolescents as they proceed through the developmental process. This study was done to describe pharmacists’ attitudes and practices with adolescents.

This study adds a description of these attitudes and practices with adolescents around contemporary issues of pharmaceutical care, contraceptive care, and emergency contraception. The study also shows that emergency contraception is largely unavailable, and that confidentiality may not be maintained by all members of the health care team. Educating all members of the health care team about adolescent development, confidentiality, and medications commonly used in this age group may improve access to care for adolescents.

The majority of pharmacists responding to the survey fill prescriptions for adolescent patients. Pharmacists perceive that adolescents use pharmacies to receive prescription medications, but are less likely to use pharmacy services such as medication counseling and drug or medical device information. A substantial proportion reported inadequate levels of training in issues regarding adolescent health care. Emergency contraception is unavailable in many pharmacies, and prescriptions for these medications may be refused by pharmacists. Of pharmacists who do stock and dispense emergency contraception to adolescent women, many feel uncomfortable providing this service. In addition, we found that adolescents—especially younger adolescents—may encounter significant barriers in confidentially obtaining prescription contraceptive products.

The National Center for Health Statistics reports that about 8% of ambulatory visits are by adolescents. Medication is prescribed at 58% of those visits, with 32% receiving 1 medication, 17% receiving 2 medications, and 9% receiving 3 or more medications. Adolescents are also frequent users of nonprescription medications and devices. Fifty-nine percent of older adolescents report use of 1 or more nonprescription medications in the previous week. Many pharmacists report that discussion of nonprescription medications and devices is a common professional activity. For example, 67% state that they counsel about acne medications at least monthly, with an average of 6.6 discussions per month. Sixty-six percent advise patients about pregnancy or ovulation test kits each month, with an average of 4.0 discussions. Adolescents use medical devices such as home pregnancy test kits. Of sexually active young women (ages 13-19 years) who were surveyed at an adolescent health clinic, 34% had used a home pregnancy test. Of those with a negative test, 48% did not confirm the result. Reasons that young women had never used a home pregnancy test kit included embarrassment about buying the test (13.5%), not knowing how to use the test (10.3%), and not trusting the result (30.5%).

In our study, pharmacists stated that they were asked questions about prescription medications, over-the-counter preparations, and medical devices, but less frequently than in earlier studies of adult populations. One reason adolescents may be reluctant to ask questions is that less than half of pharmacies surveyed had private space available for confidential discussions with patients. It was also noted that pharmacists responded differently to perceived question asking for over-the-counter medications and medical devices on the basis of population where the site was located. One potential explanation is that specialty pharmacies with limited over-the-counter items (eg, hospital pharmacies and home care pharmacies) are more likely to be located in areas with larger populations.

### Table 4. Case Scenario Responses

<table>
<thead>
<tr>
<th>Medication</th>
<th>Age 14 y</th>
<th>Age 17 y</th>
<th>Age 14 y</th>
<th>Age 17 y</th>
<th>Age 14 y</th>
<th>Age 17 y</th>
<th>Age 14 y</th>
<th>Age 17 y</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ortho-Cyclen†</td>
<td>659 (82)</td>
<td>732 (90)</td>
<td>415 (52)</td>
<td>498 (62)</td>
<td>361 (45)</td>
<td>442 (55)</td>
<td>548 (68)</td>
<td>633 (78)</td>
</tr>
<tr>
<td>Ovral† (Emergency Contraception Dosing)</td>
<td>75 (9)</td>
<td>27 (3)</td>
<td>90 (11)</td>
<td>48 (6)</td>
<td>69 (9)</td>
<td>31 (4)</td>
<td>113 (14)</td>
<td>59 (7)</td>
</tr>
<tr>
<td>Premarin†</td>
<td>35 (4)</td>
<td>14 (2)</td>
<td>158 (20)</td>
<td>127 (16)</td>
<td>323 (40)</td>
<td>281 (35)</td>
<td>114 (14)</td>
<td>88 (11)</td>
</tr>
<tr>
<td>Accutane†</td>
<td>36 (5)</td>
<td>37 (4)</td>
<td>134 (17)</td>
<td>127 (16)</td>
<td>45 (6)</td>
<td>47 (6)</td>
<td>36 (4)</td>
<td>32 (4)</td>
</tr>
</tbody>
</table>

*Data are given as numbers (percentages). Because of rounding, percentages may not total 100.
†Each medication comparison is statistically significant at *P* < .05. See text for description of medications.
Pharmacists’ widening scope of practice may be accompanied by expanded prescribing authority. In at least 35 states, pharmacists have collaborative practice agreements that may involve approving refills and initiating and changing certain medication regimens (Kristina E. Lunner, American Society of Health System Pharmacists, oral communication, May 28, 2002). In some states, pharmacists are able to prescribe emergency contraception and thus may be asked to dispense these medications to adolescents. According to data from our study, some pharmacists may be unwilling to prescribe emergency contraception even if legally allowed.

Indiana law, like that in many states, does not address provision of contraception to minors, but does allow confidential diagnosis and treatment of sexually transmitted diseases for adolescents regardless of age. In addition to local laws surrounding provision of care to adolescents, health care providers of all disciplines are confronted with complex ethical issues related to adolescent health care, especially for reproductive health services. The Pharmacist Conscience Clause was set forth by the American Pharmaceutical Association in recognition of these and related issues.19 The Conscience Clause states that pharmacists have a right to exercise conscientious refusal of service. The clause also supports the establishment of systems to ensure patients’ access to legally prescribed therapy without compromising the pharmacist’s right of refusal. However, refusal is likely to serve as a barrier to access for adolescents, especially when emergency contraception is not universally available.

Providers should realize that confidentiality may not be maintained by all members of the health care team, and that a prescription may be refused by the receiving pharmacist. Education of pharmacists, physicians, and adolescents about adolescent health issues may decrease barriers to care for adolescent patients. Increasing pharmacists’ comfort with adolescent issues may increase both the quality and frequency of interactions.

For adolescent patients, pharmacists may help to improve compliance and optimize therapy by understanding adolescent needs and anticipating some of the concerns that they may have about their medications. Pharmacists can also help to decrease adverse effects and drug interactions by knowing the adolescent’s history, including other medications (both prescribed and nonprescribed), type of activities in which the teen is participating, and pregnancy status.

Several limitations of the study should be noted as the results are considered. The majority of respondents were men who had been in practice for longer than 15 years. This is not surprising, since the survey was directed to the chief pharmacist at each site. We believed that the chief pharmacists would be responsible for policies and procedures at their site. We chose to survey a single pharmacist in each licensed pharmacy rather than each pharmacist in the state. Our rationale for this choice was concern about nonindependence of responses from pharmacists working within single pharmacies or those working for large companies governed by corporate policies and guidelines. Our response rate was 70%. Although this is an excellent response rate for a mailed survey, nonrespondents may systematically differ from those who completed the survey. Thus, the survey does not represent all pharmacists, but certainly addresses a broad cross section of pharmacies in Indiana.

Many of the pharmacists surveyed indicated interest in learning more about adolescent health care issues and requested continuing-education modules. Improving pharmacists’ training in adolescent health care and increasing adolescents’ knowledge of pharmacists may improve interactions between pharmacists and adolescents. The pharmacist is an integral part of the health care team, and we suggest that the role of pharmacists in adolescent health receive increased attention, both during pharmacy training and in postgraduate forums. This may ultimately lead to decreased barriers to care and improved health outcomes for adolescents.

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REFERENCES

7. Vener AM, Krupka LR, Climo JJ. Drugs (prescription, over-the-counter, social) and the young adult: use and attitudes. Int J Addict. 1982;17:399-415.