Pain is a universal experience shared by all humans, and it has been described as the lowest common denominator of the human condition. Although pain is derived from the Latin word *poena*, meaning punishment, a more widely accepted characterization by the International Association for the Study of Pain describes pain as “an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage.”

Pain is a complex subjective experience that is difficult to evaluate both quantitatively and qualitatively. Pain is typically characterized as acute or chronic and is due to nonmalignant and malignant disorders. The cause(s) and the natural history of specific pain conditions must be known before the pain can be effectively managed, but assessment can sometimes be challenging, especially in children and the cognitively impaired elderly.

Despite an expanding knowledge of the pathophysiology and treatment of pain, health care providers are often reluctant to provide adequate treatment for pain, especially with opioid medications. Cited reasons for this reluctance include inadequate formal training in pain management, fear of scrutiny by regulatory agencies, provider attitudes and beliefs, and fear of psychological dependency. This study’s objective was to assess the current attitudes, beliefs, and knowledge of family physicians. To meet this objective, a survey of family physicians was conducted, focusing on providers in the state of West Virginia.

**Methods**

**Survey Procedures and Subjects**

The survey was mailed to all 537 members of the West Virginia Chapter of the American Academy of Family Physicians (WVAAFP) in October 2002. Approximately 5% of the surveys were mailed to out-of-state members appearing on the WVAAFP organization’s roster.

Participants were given 2 weeks to respond. No follow-up questionnaire was mailed. An Institutional...
A pilot survey instrument was developed and administered to faculty and resident physicians in a university-based health science center department of family medicine. Following a review of the pilot study findings and refinement of the instrument, the final survey instrument was comprised of questions about the respondents’ demographic characteristics and practice experience, followed by 10 attitudinal and behavioral items and 10 knowledge items about pain management.

Attitudinal/behavioral items asked questions regarding apprehension about prescribing pain medication, opioid use in substance abusers, laxative prescription, scrutiny by regulatory agencies, patient satisfaction, provider frustration, assessment of the elderly, time expenditure, and formal training. Knowledge questions asked about drugs of choice, routes of administration, analgesic associations, and adverse effects. Participants were asked to read each item and mark their responses using a 5-point Likert scale that ranged from 1 (strongly disagree) to 5 (strongly agree) for the attitudinal/behavioral items and indicating either true or false responses for the knowledge items.

Statistical Analysis

For the survey items addressing attitudes and behaviors of pain and pain management, response of “strongly disagree” or “moderately disagree” were combined into a single category of “disagree.” All responses for “agree,” “moderately agree,” and “strongly agree” were grouped together as “agree.”

Descriptive statistics including cross tabulation and frequency distributions were used to analyze the questionnaire responses. Chi-square analysis of the data was conducted to determine the presence of significant differences among selected discrete variables. We used SPSS® version 9.0 to analyze data.

Results

A total of 186 surveys were returned. One individual failed to answer any of the items, leaving 185 usable surveys. The response rate was thus 34.5% (185/537). Twenty-seven respondents (14.5% of the 185 usable surveys) failed to answer one or more items on the instrument; answered questions were included in the analysis, and missing data were excluded from the analysis.

Demographics of Respondents

Respondents were predominantly male (77.1%, n=131), and the majority of respondents (64%, n=119) were between the ages of 35 and 54. More than half of the respondents (56%) graduated from medical school after 1982.

The mean duration of practice experience was 15.5 ± 11.2 years. Most of the respondents (70.6%, n=125) were in private family practice in either solo or group settings. The remainder worked in hospitals, institutional and emergency settings, partnerships, academia, industry and corporations, health and family centers, rural health settings, federal and outpatient clinics, ambulatory care, and administration. Chi-square analysis uncovered no statistically significant differences in response rates according to age, gender, years in practice, and practice setting.

Attitudes and Behaviors

The majority of respondents (80.0%, n=185) were not apprehensive about prescribing high-dose opioids to patients with chronic malignant pain. However, an equal number of physicians (80%, n=185) were anxious about prescribing high-dose opioids to persons with chronic nonmalignant pain. Additionally, most respondents (85.1%, n=182) reported frustration when dealing with patients with chronic nonmalignant pain and found it time consuming to manage such patients (89.0%, n=183). Most of the respondents (92.4%, n=185) did not administer opioids to individuals with a history of substance abuse.

A large majority of respondents (93.3%, n=178) believed that patients were satisfied with their pain management. More than three fourths of the physicians (84.4%, n=185) did not believe that patients should have to tolerate as much pain as possible before implementing treatment. Nearly two out of every three physicians (67.6%, n=185) indicated that scrutiny by regulatory agencies affected their prescription of opioids. Respondents were nearly evenly split regarding whether it was difficult to assess pain in the elderly, with 48.6% (n=185) agreeing that difficulty existed. As a final point, approximately 60% (n=182) of the respondents believed that their formal medical training did not prepare them to effectively manage pain.

Chi-square analysis showed a statistically significant relationship between the practice setting for the physician and the response to managing patients, with chronic pain being time consuming (X²=87.138, P=.029). Almost 13% (n=62) of solo practice physicians, 6.3% (n=63) of group practice physicians, 5.9% (n=17) of hospital physicians, and 5.9% (n=17) of academicians felt that managing patients with chronic nonmalignant pain was not time consuming. No significant differences were found between age and gender for the attitudes and behavior survey items.

Knowledge

Analysis of response to the true/false knowledge statements revealed that a substantial proportion of respondents responded incorrectly (Table 1). In
particular, many physicians responded incorrectly to statements about the use of transdermal fentanyl, prescribing laxatives to patients taking opioids, treating opioid-induced respiratory depression with oxygen, the ability of promethazine to reliably potentiate opioid analgesia, and the appropriateness of using propoxyphene to treat mild pain in elderly patients.

Chi-square analysis showed a statistically significant relationship between physician age and responses to the appropriateness of administering transdermal fentanyl to opioid-naive patients with severe pain ($X^2=15.05$, $P=.035$). Respondents in the age range of 45–49 years had the highest percentage of correct answers for this question (39.4%, n=13/33), and respondents between the ages of 50–54 had the highest percentage of incorrect answers (82.1%, n=23/28). There was also a significant relationship between physician age and responses about the appropriateness of using simple analgesics to treat mild acute pain ($X^2=26.58$, $P=.00$). There were only two age ranges that reported incorrect answers for this question: 3.8% (n=1/26) of ages 35–39 respondents and 21.4% (n=3/14) of ages 55–59 respondents reported an incorrect answer. All respondents in the other age ranges reported correct responses. No significant differences were found between gender and practice types in knowledge survey items.

Discussion

This survey gives some insight into the attitudes/behaviors and knowledge about pain and its management by family physicians. It is apparent that chronic nonmalignant pain and assessing pain in the elderly are problematic for many physician providers. Many respondents reported difficulty treating patients with chronic nonmalignant pain. Caring for these patients is both time consuming and frustrating, and the majority of physicians surveyed are fearful about prescribing large quantities of opioids to persons with chronic nonmalignant pain. Interestingly, there was a lack of consensus regarding the level of difficulty in assessing pain in the elderly patient. This finding is not surprising, given the difficulty in diagnosis and management of pain in the elderly related to (1) lack of obvious signs and symptoms of pain because of sensory, psychomotor, and cognitive impairments and (2) pharmacokinetic and pharmacodynamic changes associated with aging.

The majority of respondents did not prescribe opioids to persons with a history of substance abuse. Whether this behavior is justified or not is questionable because patients with a history of substance abuse can develop medical conditions that cause severe pain. Procedures have been developed to successfully manage opioid therapy in such patients (eg, provider-patient contracts), and there is some evidence that such individuals may not be at high risk for developing repeat psychological dependency on opioid drugs.

Perceived scrutiny by regulatory agencies expectedly does affect opioid prescribing habits by many providers. Under what circumstances the physician would fear scrutiny by outside agencies when prescribing opioids could not be determined due to the design of our survey. Regardless, these concerns appear to persist despite legislation passed by the West Virginia legislature in 1998 (Management of Intractable Pain Act, HB 4058) that liberalizes the prescription and distribution of opioids for the management of acute or chronic intractable pain, especially in terminally ill patients and in the palliative care setting.

Not unexpectedly, knowledge gaps were uncovered, but their causes remain indeterminate given the limitations of this survey. The appropriate management of opioid-induced adverse effects, analgesic use in the elderly, product selection, and analgesic pharmacology

### Table 1

Responses to True/False Knowledge Statements

<table>
<thead>
<tr>
<th>Statement</th>
<th>Correct Response</th>
<th>Incorrectly (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The oral route is preferred when administering opioids to patients with chronic pain.</td>
<td>True</td>
<td>21.2 (184)</td>
</tr>
<tr>
<td>Pain is not real if it can be relieved by the administration of a placebo.</td>
<td>False</td>
<td>21.4 (185)</td>
</tr>
<tr>
<td>Mild acute pain is best managed with simple analgesics (eg, aspirin, acetaminophen).</td>
<td>False</td>
<td>2.7 (184)</td>
</tr>
<tr>
<td>Transdermal fentanyl can be administered to opioid-naive patients in severe pain.</td>
<td>False</td>
<td>66.9 (175)</td>
</tr>
<tr>
<td>NSAIDs and corticosteroids are useful adjuncts for bone pain.</td>
<td>True</td>
<td>7.7 (181)</td>
</tr>
<tr>
<td>Propoxyphene is appropriate for mild pain in the elderly patient.</td>
<td>False</td>
<td>36.1 (183)</td>
</tr>
<tr>
<td>Promethazine (Phenergan) reliably potentiates opioid analgesia.</td>
<td>False</td>
<td>41.0 (178)</td>
</tr>
<tr>
<td>Opioid-induced constipation can be effectively treated with bulk-forming laxatives.</td>
<td>False</td>
<td>45.9 (181)</td>
</tr>
<tr>
<td>Laxatives should be prescribed for patients taking chronic opioids.</td>
<td>True</td>
<td>24.9 (181)</td>
</tr>
<tr>
<td>Oxygen should be administered to manage opioid-induced respiratory depression.</td>
<td>False</td>
<td>51.4 (173)</td>
</tr>
</tbody>
</table>

NSAIDs—non-steroidal anti-inflammatory drugs
remain problematic for many physician respondents. The majority of WVAAFP-member family physicians surveyed felt that their formal medical training did not prepare them to effectively manage pain. This finding is consistent with previously published research and reinforces the need to incorporate didactic and experiential education within the curriculum of medical school and residency/fellowship training programs.

Limitations
This study has several limitations that may affect the generalizability, interpretation, and/or utility of the results. The sample size was relatively small, and the response rate was only about 35%. Nonresponse bias was not assessed but could be present. There was also no attempt to compare the demographics of those physicians who were sent a survey to physician nonmembers of the WVAAFP. As a result, the results of the study are only applicable to WVAAFP family physicians and are neither representative of all West Virginia physicians nor of physicians practicing outside the state.

Due to a paucity of previously published valid and reliable survey instruments addressing physician attitudes about pain, we developed arbitrary survey items that were pilot tested in a university-based department of family medicine. Following review of the pilot data and consultation with a nationally recognized expert in pain survey research, the appropriate changes were made and incorporated into the revised instrument used in the statewide mailing. Attitude/behavior or knowledge questions were not grouped by specific content or objective. Importantly, however, the revised instrument was not subjected to reliability/validity testing.

Further, the nonspecific nature of this survey did not allow the participating physicians to explain why they agreed or disagreed with a specific statement nor why they believed that the knowledge statements were true or false. Therefore, an understanding as to the reason(s) for specific physician responses could not be determined.

Conclusions
We anticipate that the findings from this study will be incorporated into expanded didactic and experiential curricular offerings for students, medical residents, and established clinicians. Future research efforts should be directed toward the development of survey instruments incorporating open-ended attitudinal and knowledge items (where the physicians have an opportunity to briefly explain their answers), item development exploring how patient gender and ethnicity may influence the provision of care, and assessing the challenges of managing pain in infants and children. A national sample of family physicians is needed to more fully characterize and validate the findings from this statewide survey.

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REFERENCES

Editor’s Note: This paper was awarded first place in the category of research relevant to family medicine that was conducted by a non-family physician at the American Academy of Family Physicians 2004 Annual Scientific Assembly in Orlando, Fla.