Prevalence of Common Warts in the United States: Findings From General Population and Physician-Focused Surveys

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CONCLUSIONS

1. **The estimated US prevalence of common warts is 5.8%, indicating over 19 million sufferers of this condition**
2. **Results from the general population phase of this survey reveal the key demographics and behaviors of people with common warts**
3. **Results from the physician-focused phase of the survey provide further insights into people who seek treatment for their common warts as well as the behaviors of their treating physicians**

SYNOPSIS

- Verruca vulgaris (common warts) are benign cutaneous lesions caused by human papillomavirus infection of keratinocytes[1-3]
- Common warts are transmissible, are associated with perceived social stigma,[4,5] and may persist for several years without treatment[3]
- No specific antiviral therapies or United States Food and Drug Administration–approved prescription treatments are currently available for the treatment of common warts, and most of the commonly used therapies have limited clinical evidence of efficacy[3]
- An internet research survey was recently conducted to determine the prevalence of 7 skin conditions, including common warts, in the United States and to determine common pathways in their treatment

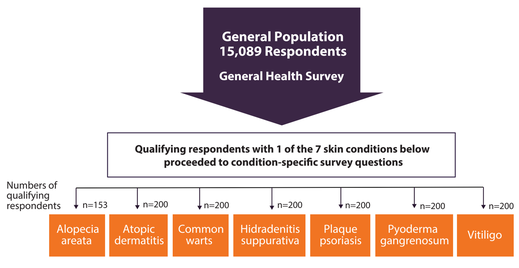
OBJECTIVE

- The objective of this presentation is to report key findings from the research survey related to the prevalence and treatment of common warts

METHODS

- This 2-phase internet survey collected data from 1) the general population and 2) physicians to identify the prevalence of 7 skin conditions (alopecia areata, atopic dermatitis, common warts, hidradenitis suppurativa, plaque psoriasis, pyoderma gangrenosum, and vitiligo) in the United States
- Survey respondents, including consumers and physicians from the general population, were contacted by a vendor through previously established panels; participant selection was not based on screenings for skin conditions
- Phase 1 of the survey assessed the general population and included questions about participants' demographics, health conditions, and attitudes and behaviors related to their health (**Figure 1**)
  - Pictures and descriptions of 7 skin conditions were shown in random order; qualifying respondents—those who reported having 1 or more of the conditions currently or within the past month, regardless of whether it was diagnosed by a health care professional—were randomly selected to proceed to condition-specific survey questions until the quota for that condition was filled (n=200)
  - Condition-specific survey questions addressed the condition's onset, occurrence, diagnosis, anatomic location, and treatments and the types of providers seen

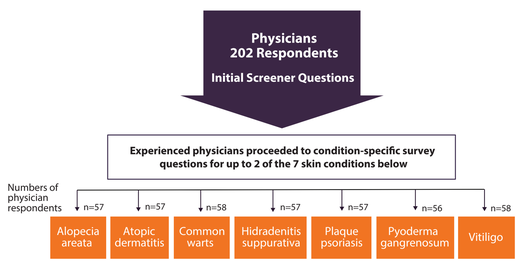
Figure 1. General Population Survey Design[a]



[a] The maximum number of qualifying respondents was limited to 200 participants for each indication.

- Phase 2 of the survey focused on physicians and included initial screening questions regarding the numbers of patients with the 7 specified skin conditions that physicians had treated within the past 6 months (**Figure 2**)
  - After previous experience was ascertained by the screening questions, each physician was randomly assigned to answer survey questions for up to 2 skin conditions that they had managed
  - Condition-specific survey questions included patient demographics, treatments, follow-up care, provider referrals, and unmet needs

Figure 2. Physician-Focused Survey Design



- The estimated US prevalence of common warts was based on stratified sampling and weighting of demographics data, and calculated by dividing the number of cases by the population size
  - The prevalence rate of plaque psoriasis, which is well established in the scientific literature, was used as the control and validity check for common warts prevalence data
- The estimated market size for the treatment of common warts, equivalent to the total number of individuals in the United States with common warts, was calculated by multiplying the US prevalence by the total US population

RESULTS

Phase 1: General Population Survey

- Of 20,056 respondents from the US general population, 1168 reported having common warts currently or within the preceding month, for an overall estimated prevalence of 5.8% (**Table 1**)
  - The estimated prevalence of common warts was greater among children than adult survey respondents (8.2% vs 5.0%, respectively)
- Common warts had the highest prevalence of the 7 skin conditions assessed

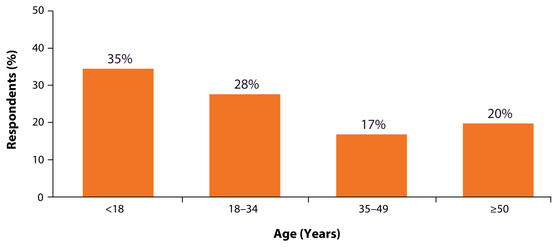
Table 1. Estimated Prevalence Rates of Common Warts

Audience[a]	Total Numbers of Respondents	Respondents With Common Warts[b]	Estimated Prevalence Rate
Children	4967	409	8.2%
Adults	15,089	759	5.0%
Total	20,056	1168	5.8%

[a] Adult participants selected responses for children in their household with common warts.
[b] Counts of respondents after the reduction factor step of the methodology was applied.

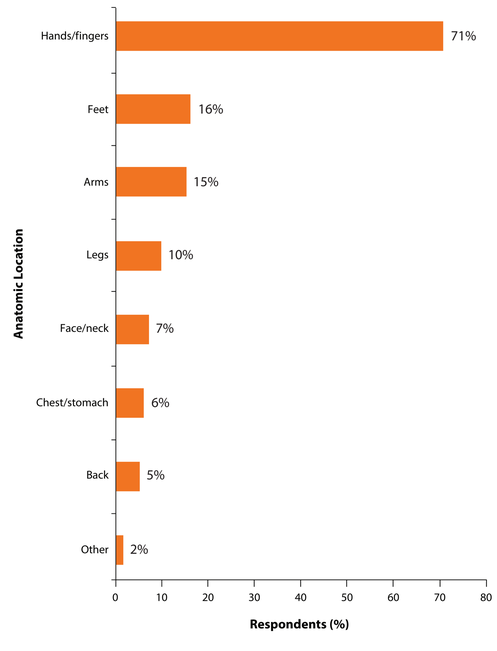
- The estimated market size for the treatment of common warts was 19,056,000 individuals in the United States
- The age distribution of survey respondents with common warts is shown in **Figure 3**; the mean age of respondents was 30.1 years due to the larger overall number of adult survey respondents

Figure 3. Ages of Survey Respondents With Common Warts



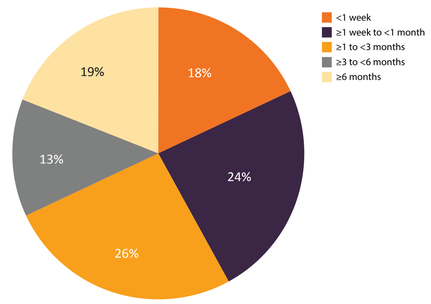
- Over 70% of respondents had common warts on their hands and fingers (**Figure 4**)

Figure 4. Percentages of Respondents With Common Warts by Anatomic Location



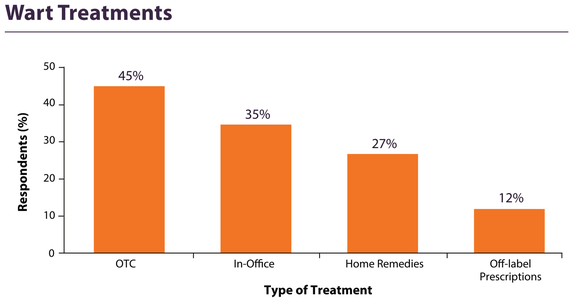
- Most respondents (45%) sought treatment from primary care physicians
  - 29% of respondents were treated by dermatologists; 31% of dermatologist-treated respondents were referred by another health care provider
  - 29% of respondents did not visit a health care provider
- Over half of adult respondents (58%) sought treatment for themselves ≥1 month after noticing wart symptoms (**Figure 5**)
- Among parents, 31% reported seeking treatment for their children within 1 week of common wart symptoms while only 16% sought treatment for themselves within 1 week of symptoms

Figure 5. Time From Common Wart Symptom Development to Treatment



- Most respondents (45%) had used over-the-counter treatments for their common warts (**Figure 6**)

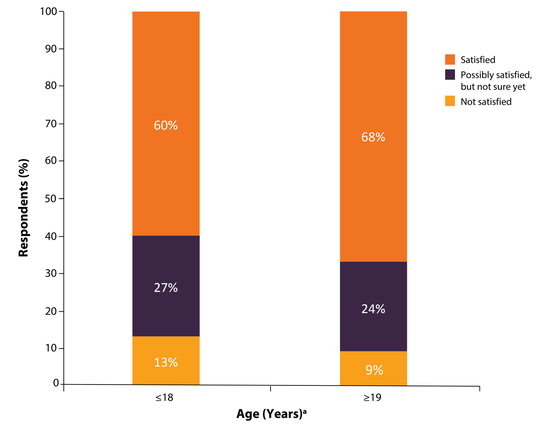
Figure 6. Respondents Using Common Types of Wart Treatments



OTC, over-the-counter treatments.

- Among respondents using at least 1 treatment, a smaller proportion of pediatric respondents versus adult respondents (60% vs 68%) were satisfied with the management of their common warts (**Figure 7**)

Figure 7. Percentages of Survey Participants Satisfied With Management of Their Common Warts, Pediatric Versus Adult Respondents



[a] Age ≤18 years, n=27; >18 years, n=173.

Phase 2: Physician-Focused Survey

- Phase 2 had 202 physician respondents (102 dermatologists, 70 primary care physicians, 30 pediatricians); 58 answered survey questions regarding common warts (**Figure 2**)
- Most physicians responded that patients with common warts were more likely to be male (**Table 2**) and more likely to be ≤19 years of age (**Table 3**)

Table 2. Physician-Reported Prevalence of Common Warts by Patient Sex and Type of Physician

Sex	Pediatrician (n=16)[a]	Primary Care or Family Doctor (n=18)[a]	Dermatologist (n=24)[a]	Total (N=58)
Female	44%	43%	49%	44%
Male	56%	57%	51%	56%

[a] Caution should be used when interpreting results due to the small sample size.

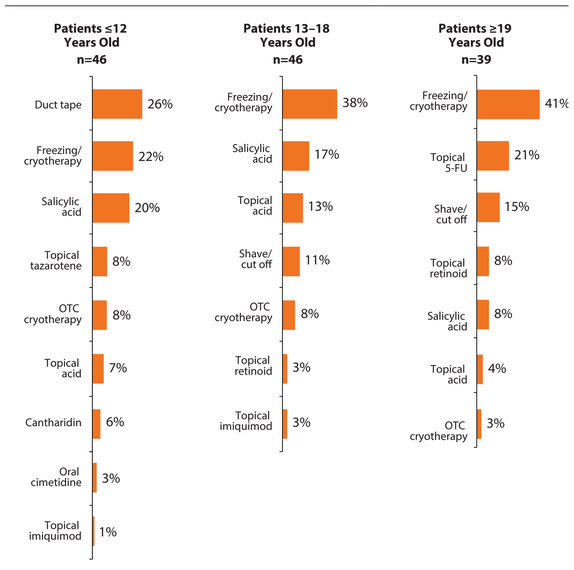
Table 3. Physician-Reported Prevalence of Common Warts by Patient Age and Type of Physician

Age (Years)	Pediatrician (n=16)[a]	Primary Care or Family Doctor (n=18)[a]	Dermatologist (n=24)[a]	Total (N=58)
<10	59%[b,c]	10%	24%	27%
10–19	38%[b]	20%	24%	26%
20–29	—	28%	17%	19%
30–39	—	18%	12%	12%
40–49	—	11%	10%	7%
50–59	—	8%	7%	6%
≥60	—	5%	5%	3%

[a] Caution should be used when interpreting results due to the small sample size.
[b] Significant differences at 95% confidence from prevalence reported by primary care physician or family doctor.
[c] Significant differences at 95% confidence from prevalence reported by dermatologist.

- The common wart treatments physicians reported using most often differed depending on the age of the patient (**Figure 8**)

Figure 8. Physician-Reported Go-To Treatments for Common Warts, Stratified by Patient Age[a]



5-FU, 5-fluorouracil; OTC, over the counter.
[a] Among physicians who treat patients in those age groups.

- In response to the question "Do you have any unmet treatment needs regarding your patients with common warts?," 52% chose the miscellaneous response category of "none/nothing"; however, 31% of physicians responded that more-effective treatments are needed for common warts
- Most physicians (65%) reported that they schedule follow-up care for patients with common warts

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Disclosures

PCK is a principal investigator and participant of advisory boards for Aclaris Therapeutics, Inc. **BB** is a consultant, investigator, and speaker for Aclaris Therapeutics, Inc. **SW** is an employee of Aclaris Therapeutics, Inc. and may own stock/stock options in that company.

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