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Assessing Dermatological Health Needs in Rural Communities: A Survey at a Rural Student-Run Free Clinic

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Abstract

Background: Rural communities face significant barriers to dermatologic care, including geographic isolation and financial constraints. These challenges contribute to delayed diagnoses, suboptimal management, and exacerbated health disparities. Rural student-run free clinics (SRFCs) provide essential services, but limited data exist on the specific dermatologic needs and barriers of these communities. This study aims to assess the dermatologic health needs, care barriers, and healthcare-seeking behaviors of rural patients attending an SRFC.
Methods: An anonymous 19-question survey was distributed via an electronic survey and data analysis software named Research Electronic Data Capture to individuals aged 18+ attending a rural SRFC. The survey collected data on demographics, dermatologic conditions, access to care, treatment and prevention strategies, and sources of dermatologic health education. Descriptive statistics were used to analyze trends in dermatologic care access, financial barriers, and information-seeking behaviors. Spearman rank correlation assessed income–dermatology access associations (α=0.05).
Results: Among 42 participants, 26.0% were aged 26-35, and 69.0% were female. Acne (38.5%) and eczema (23.1%) were the most reported conditions. Only 60.0% of those with a diagnosed condition had confirmed access to dermatologic care. Income did not correlate with care access (Spearman r = 0.27, p = 0.189). Geographic barriers persisted, as 50.0% of respondents were uncertain whether dermatology services were available locally. Younger participants (18-35) primarily relied on internet searches and social media for dermatologic information, while older participants (56+) consulted healthcare providers. Among participants earning $60,000-$90,000, 100% had access to dermatologic care, but 75% had never sought care regularly. Uncertainty about access was highest among lower-income groups.
Conclusions: Rural populations experience significant uncertainty about dermatologic care availability, contributing to delayed treatment. Financial barriers and reliance on non-medical information sources hinder effective care utilization. Targeted educational initiatives and improved access strategies, such as SRFCs, can reduce care disparities.

Introduction

Rural communities face persistent barriers to healthcare access, especially in specialties like dermatology. A shortage of providers, long travel distances, and financial hardship contribute to delayed diagnoses and poor management of skin conditions.[1] Dermatology outreach efforts, including student-run free clinics (SRFCs), aim to fill this gap by offering no-cost care to uninsured and underinsured populations.[2]

Rural patients are more likely to present with advanced skin cancers and less likely to receive timely or preventive dermatologic care.[3,4] Contributing factors include limited specialist availability, geographic isolation, and lower skin health awareness.[5] Although many skin conditions can be

managed by primary care providers (PCPs), some cases require referral—dermatology remains one of the top five referral specialties.[6-10] Rural PCPs often lack dermatoscopes or training in dermatoscopic evaluation, further limiting access to in-depth dermatology care.[11] Preventive care practices like skin checks and sunscreen use are also underutilized in these areas due to limited education and lack of resources.[12] Student-run dermatology clinics are designed not only to deliver patient care, but also to foster education and advocacy, giving trainees a unique opportunity to develop a deeper understanding of the populations they serve. By examining factors such as demographics, socioeconomic status, barriers to care, and health literacy, students can approach dermatology patients holistically and strengthen their development as well-rounded providers. Most literature regarding dermatology student-run clinics are retrospective chart reviews regarding disease prevalence and community impact, with fewer focusing on barrier identification for underserved patients and even fewer focusing on patient surveys.[13] However, a significant gap in the literature remains regarding the distinctive barriers of patients operating in rural and underserved areas.[13] Here, patient barriers are compounded by rurality, and they are often limited or have no access to dermatology specialty care within reasonable distance from their home. To reduce these disparities research must consider the specific challenges rural populations face, such as transportation barriers, healthcare costs, and lack of dermatologic health literacy.[13,14] Identifying and understanding these factors help shape future directions and proper resource allocation for SRFCs with similar rural-focused agendas. Our SRFC aimed to assess these challenges by providing specialty care and conducting a community survey targeting local dermatologic health needs.

Our student-run, free clinic located in rural Vigo County, Indiana provides essential healthcare services to a population where 9.8% are uninsured, 22.8% rely on Medicaid, and 20.0% live below the poverty line.[15] Under physician supervision, the clinic provides screenings, chronic disease management, labs, and specialty days like Dermatology Day, staffed by a dermatologist and a family medicine physician. Services include cryotherapy, biopsies, skincare products, and referrals for complex cases. The clinic's busiest days are typically specialty events such as Cardiology Day, Dermatology Day, and Back-to-School Day, as many community members lack the financial means to access these types of specialized care elsewhere. Outreach efforts include booths at farmers markets and health fairs, flyers around town and at food pantries, and targeted social media posts. While telehealth is not currently available, professional interpretation services ensure culturally competent care for non-English speakers.

While our clinic is in a metro-classified county (Rural-Urban Continuum Codes [RUCC] code 3), with many patients attending from surrounding non-metro counties (codes 5 and 6), information gathered from years of clinic attendees and advisory board insights.[16] Despite a population of 58,000, only one dermatologist practices in the area, far below the estimated need of 4 per 100,000.[17] Nationally, fewer dermatologists serve rural areas, with only 0.9% practicing in the 100 least-dense zones.[18] The Indiana State Office of Rural Health designates the area of service for our SRFC as a Medically Underserved Area (MUA), characterized this way due to the level of poverty, provider scarcity, and local poor health outcomes.[19]

This study aims to quantify skin disease prevalence, access barriers, preventive practices, and sources of dermatologic information in a rural-adjacent population. It also evaluates the impact of income on visit frequency and awareness of access to dermatological care, providing a foundation for future strategies to enhance dermatologic care in underserved communities.

Methods

An anonymous 19-question survey (Appendix) was distributed via an electronic survey and Research Electronic Data Capture (REDCap) to individuals aged 18 and older attending a student-run free clinic serving rural and underserved populations. Participation was voluntary and confidential, and patients were invited to complete the study if, self-reported, they have not already done so. The

survey was offered only in English; although all patients were invited to participate, no Spanish-speaking patients volunteered. Our largely rural population is predominantly English-speaking, with some Haitian Creole speakers. Had non-English-speaking patients expressed interest, we planned to use our digital translation system, but this situation did not occur. Surveys were anonymous, meaning they did not enter their name. The survey was multiple choice, created internally, and not formally validated. This survey was based off unique identifiers we wished to quantify as a student run clinic to help better serve our population. The survey was offered to 60 patients, and a total of 42 surveys (70.0% response rate) were completed during bi-weekly clinic sessions from May to December 2024. No Protected Health Information was integrated into the surveys; all information was de-identified and anonymous. Therefore, all information in the google sheets was de-identified inherently. The google sheet was sent only to authors and was stored on password-protected computers. The survey included five sections: demographics, dermatologic health, access to care, treatment and prevention, and health education sources. Descriptive statistics in Google Sheets (2025, Google LLC, Mountainview, CA) and REDCap (REDCap 14.5.x, Nashville, TN) identified key trends to guide rural dermatologic care strategies. Spearman rank correlation was used to look at associations between income and dermatology access, with statistical significance defied as α=0.05. This survey study was exempt by Indiana University Institutional Review Board.

Results

Participant demographics are summarized in Table 1. Here below describes insight into the population studied, those attending a SRFC in rural-adjacent Indiana. The study included 42 individuals aged 18-65+, with the largest group being 26-35 years old (26.0%). Most participants identified as female (69.0%), followed by male (29.0%) and nonbinary (2.0%). Education levels ranged from high

Table 1. Participant demographic data (N=42)

Characteristic	N (%)
Age (years)	
18-25	8 (19)
26-35	11 (26)
36-45	7 (17)
46-55	4 (10)
56-65	8 (19)
>65	4 (10)
Gender	
Male	12 (29)
Female	29 (69)
Other	1 (2)
Education	
Middle school education	0 (0)
Some high school	0 (0)
High school diploma/General Education Development	7 (17)
Some college education	14 (33)
Associate's degree	4 (10)
Bachelor's degree	14 (33)
Master's degree	3 (7)
Other	0 (0)

Participant demographics including age, gender, education, and combined household income.

Table 2. Skin conditions (N=41)

Characteristic	N (%)
Age (years)	
18-25	8 (19)
26-35	11 (26)
36-45	7 (17)
46-55	4 (10)
56-65	8 (19)
>65	4 (10)
Gender	
Male	12 (29)
Female	29 (69)

Presence of skin conditions in the sample population and the conditions diagnosed.

Table 3. Access to dermatological care (N=40)

Characteristic	N (%)
Dermatological Care in your Area	
Unsure	16 (40.0)
Yes	20 (50.0)
No	4 (10.0)
Distance to Dermatological Care (miles)	
Unsure	20 (50.0)
>5	7 (17.5)
5-15	10 (25.0)
15-30	2 (5.0)
30-45	1 (2.5)

Relationship between dermatologist access and distance to their office in miles.

school/general education development (17.0%) to a Master's degree (7.0%), with most having some college education (33.0%) or a Bachelor's degree (33.0%). Household income varied from <$30,000 (26.0%) to >$120,000 (2.0%), with the majority (40.0%) earning between $30,000–60,000 USD; 21.0% preferred not to answer.

Table 2 presents skin condition data. Most participants reported no diagnosis; among those who did, acne (38.5%) and eczema (23.1%) were most common. Of the 13 diagnosed, only 60.0% had confirmed access to care. Among 15 with frequent skin issues, 46.7% were unsure when to seek care. Prescription medication was the main treatment (60.0%), followed by home remedies (25.0%). Table 3 shows that 50% of participants believed dermatological care was available in their area, but 40.0% were unsure. Half were uncertain about the nearest provider's distance. About 25.0% reported care within 5–15 miles, and 2.5% said it was over 45 miles away. Table 4 explores income and dermatology access. In the <$30,000 group, 57.1% rarely sought care; in the $30,000–60,000 group, 58.3% never visited a dermatologist; and in the $60,000–90,000 group, 75.0% never visited. The Spearman correlation between income and visit frequency was -0.12 (p=0.592), indicating no significant relationship. Regarding access, 100.0% of those in the $60,000–90,000 group confirmed access, while the $30,000–60,000 group showed mixed responses (50% access, 31.3% unsure). Among those earning <$30,000, 44.4% confirmed access and 44.4% were unsure. The correlation between income and access awareness was 0.27 (p=0.189), also not significant.

Table 4. Income and access to care (N=42)

Combined Household Income	Frequency of Visiting a Dermatologist (%)			Patient Perceived Access to a Dermatologist (%)		
	Never	Rarely	Occasionally	Yes	Unsure	No
<$30,000	43.0	57.0	0	44.0	44.0	11.0
$30,000-$60,000	58.0	0	25.0	50.0	31.0	19.0
$60,000-$90,000	75.0	25.0	0	100.0	0	0
Prefer not to say	-	-	-	40.0	40.0	20.0

Income and frequency of dermatologist visits and dermatologist access. N=42.

Table 5. Age and household income relationship with source of dermatology information (N=42)

	Source (%)						
Age, years	Healthcare Provider	Social Media	Internet-Based Search	Television/ Radio	Community Health Worker	Family/ Friends	Other
18-25	29.4	35.3	11.8	0	5.9	17.6	0
26-35	0	23.5	35.3	0	11.8	23.5	5.9
36-45	21.4	21.4	21.4	7.1	0	28.6	0
46-55	16.7	16.7	25.0	0	8.3	33.3	0
56-65	50.0	12.5	0	0	12.5	25.0	0
>65	22.2	0	33.3	11.1	0	33.3	0
Combined Household Income							
<$30,000	33.3	16.7	16.7	8.3	8.3	16.7	0
$30,000-$60,000	20.0	22.9	25.7	0	5.7	22.9	2.9
$60,000-$90,000	22.2	0	33.3	0	11.1	33.3	0
$90,000-$120,000	0	0	0	0	0	0	0
>$120,000	33.3	33.3	0	0	0	33.3	0

Relationship between dermatologist access and distance to their office in miles, N=40.

Table 6. Comparing skin issue frequency with visits to a dermatologist

Skin Issue Frequency	Regular Visits (≥Once a Year), n	Non-Regular or No Visits, n	Total Participants, n	Percentage Not Receiving Regular Care, n
Daily	1	4	10	40.0%
Weekly	0	4	5	80.0%
Total (Chronic)	1	8	15	53.3%

Relationship of age and income to source of dermatology information.

Table 5 compares age, income, and information sources. Ages 18–35 favored social media and internet searches (35.3%). Ages 36–55 relied more on friends and family (28.6–33.3%), while ages 56–65 preferred healthcare providers (50%). Those over 65 years old were split between the internet and family (33.3%). Lower-income participants (<$30,000) consulted providers most (33.3%), while middle-income groups favored internet searches or family. The >$120,000 group used all sources equally (33.3%). Television, radio, and community health workers were least used overall. Table 6 shows that among 18 participants with daily or weekly skin concerns, only one reported receiving regular care (≥1 visit/year), resulting in a staggering 94.4% of participants with daily skin concerns not seeking

consistent medical attention. Specifically, 92.3% of individuals with daily skin issues did not have regular dermatology visits, while 100% of those with weekly concerns did not report regular care.

Discussion

Access to dermatologic care remains a critical public health concern, particularly for uninsured and lower-income individuals who may struggle with the financial burden of seeking care. Standard excision costs in the U.S. range from $807 to $1,252, with simpler procedures like electrodesiccation and curettage as low as $471.[20] Mohs surgery averages $805 to $2,085 per lesion, though costs can exceed $3,500 with complex repairs or hospital-based care.[21] Given these costs, many forgo care or seek less effective alternatives. When combining the impact of distance and financial hardship, rural patients have been shown to experience more advanced disease states at time of diagnosis, further compromising clinical outcome and morbidity for the patient, that which our clinic tries to mitigate.[3] Our findings highlight these barriers and the interplay between income, awareness, and healthcare-seeking behaviors in underserved populations. Implementing preventative strategies—such as routine skin checks and sun protection counseling—in rural primary care settings and student-run outreach clinics may help reduce skin cancer incidence and prevent disease progression.

The Influence of Age and Gender on Dermatology Access

Our study found that most participants seeking free dermatology care fell within the 26-35 age range, a finding that aligns with trends in healthcare coverage transitions. Young adults frequently lose parental healthcare coverage at 26, coinciding with the need to establish independent insurance plans, which may not include comprehensive dermatologic benefits.[22] Additionally, the predominance of female participants (69.0%) in our study may suggest either a higher prevalence of self-reported skin concerns among women or greater engagement with healthcare resources, a pattern observed in prior studies on dermatologic healthcare utilization.[23] No current data exists on the exact proportion of female to male attendees at our clinic; this may or may not be representative of our typical SRFC. about the current These demographic insights are essential for tailoring outreach programs and ensuring that free dermatology clinics address the needs of the most vulnerable populations effectively. For example, digital campaigns on platforms that are popular among young adults, such as Instagram and TikTok, could raise awareness about free clinic availability in their area, as well as provide education directly. Clinics may also collaborate with community colleges and employers whose insurance benefits may be lacking to connect this population to free local care.

Gaps in Access to Dermatologic Care

While 60.0% of participants with diagnosed conditions had confirmed access to care, many others remained uncertain about how to seek treatment. Among the 26 participants who reported a skin problem in the past year, 10 were unsure of their access, and 4 had no access at all. Nearly half (47.0%) of those with frequent symptoms did not know when to seek care. These findings align with broader research indicating that people with chronic skin conditions often delay seeking medical attention due to uncertainty, cost, and limited awareness of available services.[23] This gap in care can be addressed with free student-run outreach clinics. Clinics could implement simple dermatology handouts tailored to common skin concerns or integrate brief educational sessions during patient visits to help patients further understand and advocate for themselves, at no cost. Additionally, using QR codes linking to dermatologist-vetted resources or creating a rotating “Ask a Derm” student station during clinic hours—or at local farmers markets or health fairs—could further promote engagement and improve health literacy among underserved populations. Primary care offices could also develop referral guides differentiating when it is appropriate to send patients to a dermatologist versus what can be managed in-house. Strategies that maximize patient education and preventative measures, such as sun protection and self-skin checks, could improve health literacy and reduce

dermatologic burden on both patients and primary care providers, especially in areas with limited access to specialty care. Additionally, recruiting the use of teledermatology in underserved areas may temporarily bridge access gaps. Teledermatology also has the potential to serve as a triage tool, directing patients either to local primary care or to specialized dermatologic care.

The Role of Geographic Availability in Care-Seeking Behavior

Despite nearby dermatologists, our data show a disconnect between availability and use. While 50% of participants were aware of local services, 40.0% were unsure. Even with dermatologic care reported within 5-15 miles, many individuals with skin issues did not seek routine care. Proximity alone does not ensure utilization—barriers like cost, limited awareness, and low perceived urgency often outweigh geographic access. Prior studies show rural patients may view dermatology as non-essential, contributing to underuse.[24] Targeted outreach and education could help close this gap by improving understanding of when and why to seek care.

The Impact of Income on Dermatology Utilization

Income is often a strong determinant of healthcare access, but our findings suggest a more nuanced relationship between financial status and dermatologic care utilization. The lowest-income group (<$30,000) had the highest percentage of individuals who rarely sought dermatologic care (57.1%), and 42.9% of them reported never visiting a dermatologist. However, a surprising finding was that the higher-income group ($60,000-$90,000) had the highest percentage of individuals who never sought dermatologic care (75.0%), with none attending regularly. Despite these variations, the Spearman correlation between income and frequency of dermatology visits was not statistically significant (-0.12, p=0.592), suggesting that other factors, such as health literacy, perceived necessity, and availability, may play a larger role in determining healthcare utilization. Prior research has indicated that while financial barriers are critical, cultural and educational factors also strongly influence dermatologic healthcare-seeking behaviors.[23,24]

Awareness of Dermatology Resources and Its Impact on Care Access

Income did appear to play a role in awareness of local dermatology resources. Among participants earning $60,000-$90,000, 100.0% confirmed access to a dermatologist, whereas uncertainty about access was most prevalent among lower-income groups. The Spearman correlation of 0.27 (p=0.189) did not indicate a statistically significant relationship between income and awareness, suggesting that financial status may influence knowledge of available services but is not the sole determinant. This is consistent with research demonstrating that higher-income individuals generally have better health literacy and access to information about medical resources.[23,25] Efforts to improve healthcare access awareness among lower-income populations could help mitigate these disparities, such as distributing information about student-run free clinics in low-income neighborhoods and in places that house soup kitchens and community support programs.

Implications for Free and Student-Run Clinics

Table 6 shows that among 15 participants with daily or weekly skin issues, only one received regular dermatologic care. Specifically, 90.0% of those with daily and 100.0% of those with weekly concerns rarely or never saw a dermatologist—highlighting a critical care gap. SRFCs in rural areas can help address this need by providing dermatologic services through dermatologists or family physicians (a common caretaker of dermatology concerns in rural areas). There are students interested in both specialties training at this SRFC. Nearly half of those with frequent issues were unsure when to seek care, suggesting health literacy interventions could improve outcomes. At our SRFC, events like Dermatology Day provide screenings, consultations, and treatment. To further expand impact, clinics could implement public outreach on skin cancer risk factors, sun protection, and self-exams through social media and in-clinic demonstrations.[26]

Study Limitations

A primary limitation of this study is its cross-sectional survey design, which captures data at a single point in time and therefore cannot assess causality or changes in dermatologic behaviors, access, or outcomes over time. Further, the survey was created internally and not formally validated, a limitation that may introduce systematic bias in the measurements and conclusions. The survey was based off unique identifiers we wished to quantify as a student run clinic to help better serve our population. Unfortunately, between the time of May-December 2024, many clinics did not get offered the survey because an individual from the survey study was not in attendance, leading to a lower statistical power. The survey relied on self-reported data, thereby introducing the potential for response bias. Social desirability bias may have also influenced participants to overstate their positive health behaviors or underreport potentially stigmatized conditions. Additionally, there is a possibility of selection bias due to the voluntary nature of the survey, because individuals with active skin concerns or a greater interest in dermatologic care may have been more likely to complete the survey. These factors may limit the generalizability of the findings as they may not be fully representative of all rural or underserved populations.

Conclusion

Rural patients attending a student-run free clinic reported frequent skin concerns but substantial uncertainty about local dermatology service availability, limited routine care despite nearby services, and heavy reliance on non-medical information sources, highlighting the need for targeted education and improved access strategies to reduce dermatologic care disparities in underserved areas. This survey represents an important step toward understanding the dermatological health needs of rural populations and addressing disparities in access to care. By identifying barriers, gaps in dermatological services, and attempting to understand how financial status and dermatology education can shape health behaviors, this study will contribute to the development of targeted interventions to improve health outcomes in underserved areas. The results will also serve as a foundation for future initiatives aimed at increasing awareness and accessibility of dermatological care in rural communities.

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Disclosures

The authors have no conflicts of interest to disclose.

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