

BRIEF REPORT

DERMOSCOPY CURRICULUM IN FAMILY MEDICINE RESIDENCY BRIDGES GAP BETWEEN DERMATOLOGICAL CARE OF SKIN MALIGNANCIES IN RURAL, UNDERSERVED MEDICAL COMMUNITIES

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An important aspect of any family medicine resident's training is the ability to competently diagnose and manage common skin conditions, including differentiating between benign and potentially malignant skin lesions. This is particularly important for residents planning to practice in rural or underserved areas where patients may have limited access to specialty dermatologists due to barriers related to their social determinants of health. The authors believe that training family medicine residents in the effective use of dermoscopy can improve the accuracy with which they are able to differentiate between benign and malignant skin lesions, and thereby reduce the need for unnecessary and burdensome referrals to dermatology specialists.

Use of the triage amalgamated dermoscopic algorithm (TADA) as part of a family medicine residency's dermatology curriculum is a simple and effective way to train residents in the use of dermoscopy, and could prove to be an important part of how FM GME programs produce a primary care workforce with the knowledge and skills required to care for the healthcare needs of rural and underserved patient populations.

INTRODUCTION

Skin conditions are among the top 20 reasons patients present to their family medicine physicians.^{1,2} Commonly referred to as the largest organ system of the human body, skin cancer is currently the most common cancer diagnosed in the United States and the incidence of both nonmelanoma and melanoma skin cancers continues to rise.³ According to the *American Journal of Preventive Medicine*, the number of adults treated with skin cancers increased from 3.4 million during 2002–06 to 4.9 million in 2007–11.³ Nonmelanoma skin cancers (NMSC), including basal cell carcinoma and squamous cell carcinoma, now constitute more than 1 million new cases annually, while new reported cases of malignant melanoma (MM) was noted to be at over 85000 in 2017.^{4,5}

Osteopathic physicians, with their unique training in structural physical exam and osteopathic manipulative medicine (OMM),

have more opportunities to discover skin lesions than only using limited traditional problem-focused exams. Furthermore, DOs are more likely to choose to live and practice in rural communities than their MD counterparts.⁶

With a national shortage of dermatologists, patients living in rural and underserved areas of the country have the least access to dermatologists.^{7,8} It is critical that family physicians—especially rural predominating osteopathic physicians—are well trained in the diagnosis and management of skin conditions.^{7,8}

ADOPTING A SECONDARY PREVENTION METHOD FOR SKIN CANCERS

Clinical assessment of skin lesions in the primary care setting requires that the family physician understands how to consistently and accurately differentiate benign skin lesions from those suspicious enough to warrant biopsy or referral to a dermatologist.⁸ With little time dedicated to teaching dermatology in medical school education and even post-graduate training, many primary care physicians acknowledge being ill-prepared for managing skin related conditions. Despite current “skin conditions” curriculum guidelines published by the American Academy of Family Physicians (AAFP), which state that family medicine residents should gain competency in using dermoscopy

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to complement physical exams, very few family medicine residency programs report including dermoscopy into their didactic curriculum.^{2,8}

Dermoscopy involves use of a dermatoscope, a handheld light-emitting, cost-effective instrument that magnifies the skin; enhances characteristics of color and structure of the epidermis, dermis and papillary dermis; and has been proven to improve diagnostic accuracy, sensitivity, and specificity when attempting to differentiate suspicious and benign appearing skin lesions.⁹⁻¹³ The triage amalgamated dermoscopic algorithm (TADA) is a simplified and easy to learn dermoscopic algorithm that can be used to diagnose both pigmented and nonpigmented skin cancers.⁸ Teaching family medicine physicians to apply the TADA method has been shown to significantly improve primary care physicians' ability to safely and accurately differentiate benign from suspicious skin lesions, increasingly detect suspicious lesions that truly warrant referral, and reduce patient cost, inconvenience, unnecessary referrals and lack of follow-up.^{8,14}

ENABLING FAMILY MEDICINE RESIDENTS TO DIAGNOSE PIGMENTED AND NONPIGMENTED SKIN CANCERS

TADA enables primary care physicians to confidently identify pigmented and nonpigmented skin cancers by recognizing architectural patterns such as disorganized structure, asymmetric color, blue-black or gray color changes, "hair pin" vessels, ulceration or starburst patterns.⁸ Additionally, users are taught to recognize the common features of benign skin lesions such as dermatofibroma, angioma and seborrheic keratosis.⁸ Appreciation and recognition of these benign skin lesions helps reduce the number of unnecessary biopsy procedures and unwarranted referrals to dermatologist.¹⁴ The subjective interpretation of architectural disarray using a dermatoscope has high interobserver agreement and discriminatory power for malignancy,⁸ and improves diagnostic accuracy, sensitivity and specificity.¹² The TADA method of dermoscopy prompts users to study a lesion's architecture, assess for disorder or other malignant features and determine if the findings suggest the need for biopsy or a referral to specialist.¹²

IDENTIFYING BARRIERS TO USE OF DERMOSCOPY IN FAMILY MEDICINE

With dermoscopy being a best practices screening tool for family physicians, and the AAFP's skin conditions curriculum encouraging dermoscopy use, it is unfortunate that only 8% of family physicians are utilizing dermoscopy.^{2,15} Barriers cited regarding use of dermoscopy included lack of training and access due to cost.¹⁶

DEVELOPING A SOLUTION TO OVERCOME BARRIERS

Research has proven that short dermoscopy workshops offered during residency training have a significant impact on how physicians perceive the barrier of lack of training.¹⁵

Georgia South Family Medicine Residency Program is located in a rural county of southwest Georgia where the median income is below \$21,000 and the social determinants of health play a large role in patient access to care.¹⁷ Consequently, it is the authors' belief that prior to having a dermatologist practicing in the area, limited access to advanced dermatological care resulted in delayed diagnosis and treatment of malignant and premalignant skin lesions.

As part of a joint resident and faculty scholarly activity project, a dermatology curriculum was developed to prepare family medicine residents to become competent in identification and differentiation of benign and suspicious/malignant skin lesions and to guide residents in decision making for biopsy, excision or referral of suspicious lesions. Competency is achieved by having a faculty member and an interested resident are tasked with teaching dermoscopy to other faculty members and residents in a 2-hour workshop utilizing materials and other didactic resources provided by dermatologist Elizabeth Seiverling, MD, at Maine Medical Center. Permission to use resources was granted to address the lack of training barrier commonly cited among family medicine physicians.¹⁵

The workshop required learners to complete a 30-minute timed pre-test in which they attempted to identify photos of various benign and malignant skin lesions.¹⁵ Learners watched a 30-minute video, followed by a 30-minute educational PowerPoint presentation created by Maine Medical Center Dermatology Department on benign and malignant skin conditions. Residents completed a timed 30-minute post-test of the same lesions presented in a different sequence, which assessed improvement in ability to accurately differentiate benign from suspicious lesions.¹⁵ Georgia South family medicine residents (n=9) were surveyed with pre-test scores averaging 59.7% and post-test scores averaging 73.6%. Longitudinal competency was fostered by having learners repeat and review the post-test at a minimum of 8 weeks later. Following the TADA workshop, residents were tasked with using the dermatoscope in clinic when assessing skin lesions and were required to describe features identified on dermoscopy that supported their decision to biopsy, excise, refer or offer supportive reassurance. Three months after the initial workshop, residents were provided an additional post-test, averaging 85.9%, further supporting that competency can be achieved with the dermoscopy workshop.¹⁵

CONCLUSION

Implementing an efficient, productive and safe dermoscopy curriculum in family medicine residencies supports the important role the osteopathic family physician has in early identification of potentially malignant skin lesions, especially in rural and underserved patient populations. Because dermatologist density is highest in urban areas and lowest in rural medically underserved areas, adding a family medicine dermatology curriculum that includes training and repetitive use of the TADA method of dermoscopy would allow family physicians to help serve as the part of the solution for unequal access to competent medical management of skin cancers in rural and medically underserved communities throughout the country.^{16,18}

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