

# Spectrum of Office-Based Procedures Conducted at the Dermatology Clinic of the Lagos State University Teaching Hospital, Lagos

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## ABSTRACT

**Background:** The demand for procedural dermatology is on the increase because of the increased awareness of dermatological interventions by patients. Despite the common performance of these procedures, there is a dearth of literature on the frequency of their performances. This study aimed to document the frequency and indications for these office-based procedures.

**Methods:** This is a retrospective cross-sectional study of 1,400 office-based procedures conducted at the outpatient dermatology clinic of the Lagos State University Teaching Hospital from September 2016 to December 2021. Data extracted included age, gender, clinical indications for procedures, and the procedures done. The data were entered into an excel sheet and analyzed using R Studio (R Core Team (2021)).

**Result:** The age of the patients ranged from 1 to 89 years with a mean of  $35.5 \pm 15.2$  years. The most frequent indications for a procedure were keloid (32%), acne (20%), and warts (5.7%). The frequencies of the most performed procedures were intralesional triamcinolone acetonide (IL TAC) injection (25.7%), biopsy (21.4%), chemical peel (20%), and IL TAC plus 5-FU (7.1%). Chemical peels were commonly done for acne and melasma.

**Conclusion:** Documentation of the procedures available in dermatology will not only stimulate interest by trainees in dermatology, but it will also allow for the appropriate deployment of scarce resources and a knowledge of where skills can be acquired.

**Keywords:** Dermatology procedures. Cryotherapy, Hyfrecation, Chemical peel, microneedling, platelet replacement therapy.

## Spectre de Procédures en Cabinet Réalisées à la Clinique de Dermatologie de l'Hôpital Universitaire de l'État de Lagos, Lagos

### ABSTRAIT

**Contexte:** La demande en dermatologie procédurale est en augmentation en raison de la sensibilisation accrue des patients aux interventions dermatologiques. Malgré la performance commune de ces procédures, il y a peu de littérature sur la fréquence de leurs performances. Cette étude visait à documenter la fréquence et les indications de ces procédures en cabinet.

**Méthodes:** Il s'agit d'une étude transversale rétrospective de 1 400 procédures en cabinet menées à la clinique externe de dermatologie de l'hôpital universitaire de l'État de Lagos de septembre 2016 à décembre 2021. Les données extraites comprenaient l'âge, le sexe, les indications cliniques des procédures et la démarches effectuées. Les données ont été saisies dans une feuille Excel et analysées à l'aide de R Studio (R Core Team (2021)).

**Résultat:** L'âge des patients variait de 1 à 89 ans avec une moyenne de  $35,5 \pm 15,2$  ans. Les indications les plus fréquentes d'intervention étaient les chéloïdes (32 %), l'acné (20 %) et les verrues (5,7 %). Les fréquences des procédures les plus pratiquées étaient l'injection intralésionnelle d'acétonide de triamcinolone (IL TAC) (25,7 %), la biopsie (21,4 %), le peeling chimique (20 %) et l'IL TAC plus 5-FU (7,1 %). Les peelings chimiques étaient

couramment pratiqués pour l'acné et le mélasma.

**Conclusion:** La documentation des procédures disponibles en dermatologie stimulera non seulement l'intérêt des stagiaires en dermatologie, mais elle permettra également le déploiement approprié de ressources rares et une connaissance des domaines où les compétences peuvent être acquises.

**Mots clés:** Actes dermatologiques. Cryothérapie, Hyfréation, peeling chimique, microneedling, thérapie de remplacement plaquettaire.

## Introduction

The demand for dermatologist consultation and procedural dermatology is on the increase because of the increased awareness of dermatological interventions.<sup>1-3</sup> The office-based procedures conducted in dermatology are diverse. They include biopsies, cryotherapy, intralesional injections, hyfrecation, and chemical peeling.<sup>1,4-7</sup> These procedures are conducted based on the patient's clinical diagnosis. It is recorded that in the United States of America (US), chemical peels are the third most performed in-office procedure.<sup>1</sup>

None of these procedures is limited to the treatment of just one disease entity.<sup>1,5,7,8</sup> Cryotherapy which is the use of liquid nitrogen at a temperature of minus 196 degrees centigrade (°C) is used in the treatment of warts, lichen simplex chronicus, keloid, corn, epidermal naevus, seborrheic keratosis, actinic keratosis, and other skin diseases.<sup>5,9-11</sup> Hyfrecation which is a form of cauterization or electrosurgery is useful in the treatment of warts, epidermal naevus, and seborrheic keratosis.<sup>7,12,13</sup> Chemical peels are typically utilized as adjunct therapies in the treatment of acne vulgaris, acne scars, anti-aging, melasma, and post-inflammatory hyperpigmentation from various skin diseases.<sup>1,14</sup>

Skin biopsies which can be excisional or incisional serve dual diagnostic and therapeutic purposes.<sup>15-17</sup> Intralesional injection of triamcinolone acetonide (IL TAC) is used in the treatment of keloid, hair loss, and lichen simplex chronicus.<sup>8,14</sup> Another intralesional injection is 5-fluorouracil (5-FU).<sup>5,19</sup> 5-FU is typically used in conjunction with triamcinolone in the treatment of keloid.<sup>10,19</sup> In addition, triamcinolone can be used in the treatment of keloid alone; in combination with 5-FU; or with cryotherapy. Platelet Rich Plasma is useful in skin rejuvenation and the treatment of hair loss.<sup>20,21</sup>

Despite the common use of these procedures, there is a dearth of literature on the frequency of their applications.<sup>1-3</sup> Policy formulation to optimize the procedures commonly done is inadequate. Furthermore, if the procedures done by various centers are documented, it can serve as a basis for skills acquisition as dermatology trainees would know where the skills for a particular procedure can be acquired. This study aims to document the spectrum of procedures done in the dermatology clinic. In addition, to determine the most frequently conducted procedures and the clinical indications.

## Methodology

This is a retrospective cross-sectional study conducted at the outpatient dermatology clinic of the Lagos State University Teaching Hospital from May to June 2022. The logbook of one thousand four hundred procedures done in the clinic from September 2016 to December 2021 was evaluated. A proforma was used in documenting the relevant sociodemographic and procedure parameters. Data extracted included age, gender, clinical indication for a procedure, and the procedure done.

The data were entered into an excel sheet and analyzed using R Studio (R Core Team (2021)). Sociodemographic characteristics were reported and summarized as the mean and standard deviation for age, and frequency with percentages for age groups, biological sex, clinical diagnosis, and procedures. Procedures were cross-tabulated with their indications to determine the main reasons for different procedures. This relationship was visualized using a bar plot.

## Results

A total of four thousand, four hundred and ten (4,410) patients were attended to in the period under review and one thousand four hundred (1,400) procedures were performed. The age of the patients

ranged from 1 to 89 years with a mean of  $35.5 \pm 15.2$  years. The most frequent indications for a procedure were keloid, acne, and warts. Figure 1.

The most performed procedure in the clinic is IL TAC injection followed by biopsy then, chemical peel. Details of procedures are depicted in figure 2.

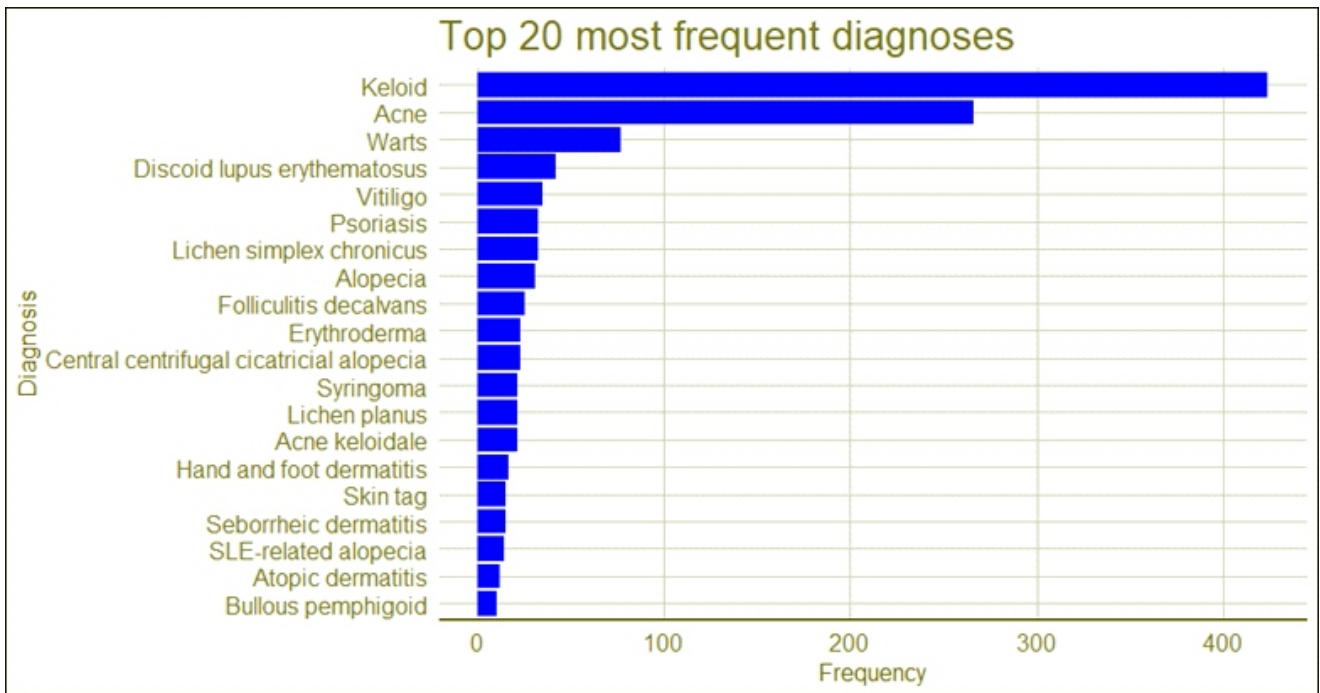


Figure 1. Column chart showing the 20 most frequently diagnosed conditions in the clinic.

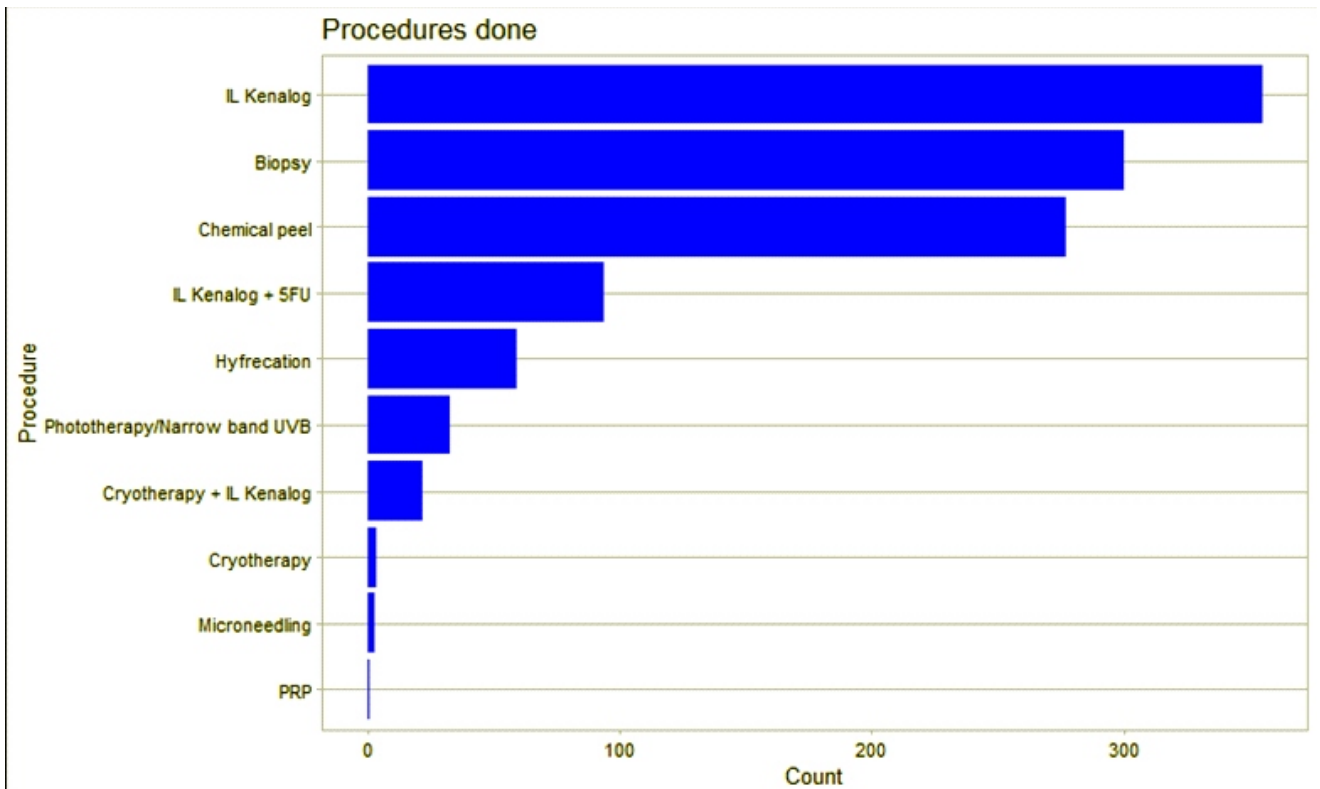


Figure 2. Column chart showing the procedures done in the clinic and the number of cases for each procedure.

The stacked chart below shows the procedures and what it was done for. Chemical peels were commonly performed for acne and melasma. Biopsies were performed for both tumour and inflammatory diseases. Phototherapy was done for vitiligo. Figure 3

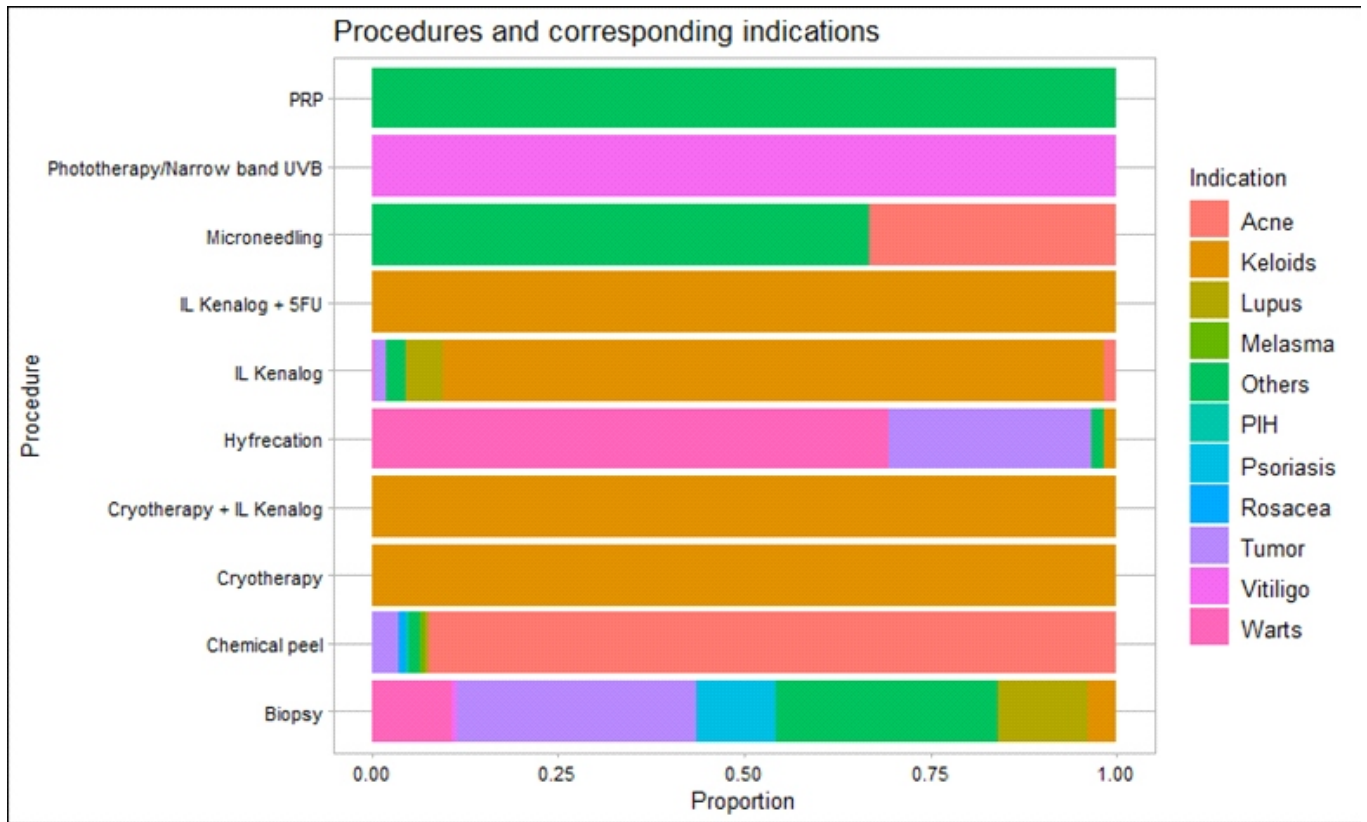


Figure 3. Stacked column chart showing the common indications for each procedure.

**Discussion**

The practice of dermatology in Nigeria is evolving and interventional procedures are becoming more common. These procedures result in the complete treatment of patients and an improvement in their quality of life.<sup>22</sup> This audit highlights the spectrum of procedures commonly performed in our dermatology clinic.

The study showed that three procedures were commonly performed; intralesional triamcinolone acetonide injections, biopsies, and chemical peels. The most performed procedure in the clinic was the intralesional injection of triamcinolone acetonide. Similar to other studies, the indication for this was keloid, hair loss from various diseases, and lichen simplex chronicus.<sup>5,8,10,18,19</sup> Excisional and incisional biopsies were the next most performed procedure. Biopsies are commonly performed both for diagnostic and therapeutic reasons.<sup>15,16,21</sup> Chemical peel was the third most performed procedure in the clinic just as

recorded in the US.<sup>1</sup> The indication for chemical peels in the clinic included acne, melasma, and skin aging, and these indications agreed with other studies.<sup>1,4,14</sup> For the treatment of keloid, IL TAC, IL TAC with 5-FU, cryotherapy, and cryotherapy with IL TAC was utilized like in other clinics.<sup>5,6,10,19</sup>

Cryotherapy, microneedling, and plasma replacement therapies are new procedures in the clinic explaining their low frequency. The indications for these procedures were the same as documented in the literature.<sup>4,5,20,21</sup>

Viral warts were treated using cryotherapy, hyfreaction, and excision; and hyfreaction was the most employed modality of treatment. Anwar et al in their study found hyfreaction and cryotherapy to be of equal efficacy in the treatment of viral warts with a similar frequency of recurrence.<sup>12</sup>

The discussion of this study is limited due to the non-availability of reports of frequencies of office-based dermatology procedures. The number of procedures

and their performance by board-certified dermatologists contribute to the strength of this study.

### **Conclusion**

The most common investigative procedure in the clinic is a skin biopsy and the most common therapeutic procedures are chemical peel and intralesional triamcinolone injections. Documentation of the procedures available in dermatology will not only stimulate interest by trainees in dermatology, but it will also allow for the appropriate deployment of scarce resources and a knowledge of where skills can be acquired.

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**Conflict of interest:** None

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