PATTERN OF SKIN DISEASES IN PATIENTS ATTENDING A VIRTUAL DERMATOLOGY CONSULTATION AT THE DERMATOLOGY CLINIC OF HUE UNIVERSITY OF MEDICINE AND PHARMACY HOSPITAL DURING THE COVID-19 PANDEMIC

Mai Ba Hoang Anh [1*], Tran Thi Quynh Trang [1] and Tran Anh Hung [2]

ABSTRACT

Objective*:** This study aims to survey the pattern of skin diseases through hospital deployment software based on Google Meet and Facebook Messenger. ***Materials and methods: A descriptive study of dermatological diseases through virtual examination from May 2021 to March 2022 through the "Online Consultation" Program by Hue University of Medicine and Pharmacy Hospital. Data on online examinations were compared with in-person visits during the same period, as well as those before the epidemic, collected from May 2019 to March 2020. ***Results***: Teledermatology visits accounted for a much higher rate than other specialties. There were 1,014 teledermatological examinations, 2,242 in-person visits during the epidemic, and 6,370 in-person examinations before the epidemic. Females made up a higher proportion than males. Age group 16 - 30 was examined online, accounting for 73.1%, and two groups examined in person, less than 50%. There were roughly 45% of patients calling because of acne vulgaris, other disease groups did not show any difference during or before the epidemic. **Conclusions:** This pattern of online skin diseases reveals the health problems that patients are concerned about. Virtual consultation brings many benefits to patients, improving the hospital overload situation.

Keywords: *Virtual, dermatology, consultations, teledermatology, COVID-19.*

I. INTRODUCTION

The COVID-19 pandemic has made access to the healthcare system and medical practice an unprecedented challenge. The World Health Organization (WHO) designated COVID-19 a pandemic in March 2020 and issued guidelines in an effort to slow the virus spread [1]. Dermatology practice seems to be one of the most afflicted medical specialties because dermatological evaluation needs close scrutiny, which is presently suggested to be avoided to limit the spread of COVID-19 [2] . Numerous patients with chronic dermatological conditions and skin cancers had to be monitored with their long-term treatments and the exacerbation of diseases following SARS-CoV-2. Several cutaneous manifestations related to COVID-19 have been found and reported, including morbilliform rash, pernio-like acral lesions, urticaria, macular erythema, vesicular eruption, papulosquamous eruption, and retiform purpura [3,4].

Dermatology has undoubtedly always been a good choice for telemedicine due to its dependence on visual examinations. Since these suggestions effects would last for some time, many dermatologists have turned to telemedicine as a way to maintain social

[1] *Department of Dermatology, University of Medicine and Pharmacy, Hue University, Vietnam*
[2] *Department of Information Technology, Hue University of Medicine and Pharmacy Hospital, Vietnam*
Responsible person: Mai Ba Hoang Anh
Email: mbhanh@huemed-univ.edu.vn
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distance while still keeping in touch with their patient bases. Telehealth in dermatology, or teledermatology does indeed appear to be particularly well adapted for sustaining treatment throughout a pandemic [5].

This study aims to describe the distribution of diseases consulted through teledermatology, and the use of this technique to avoid traditional clinical encounters in the Vietnamese population. Therefore, we carry out this study to make teledermatology a reliable consultation tool so that telehealth services in dermatology will become widely accepted as valid for patient care.

II. MATERIALS AND METHODS

We evaluated the expansion of teledermatology from May 2021, until March 2022. These days were selected as the program's beginning and ending times for the free online medical examination which was deployed by Hue University of Medicine and Pharmacy Hospital.

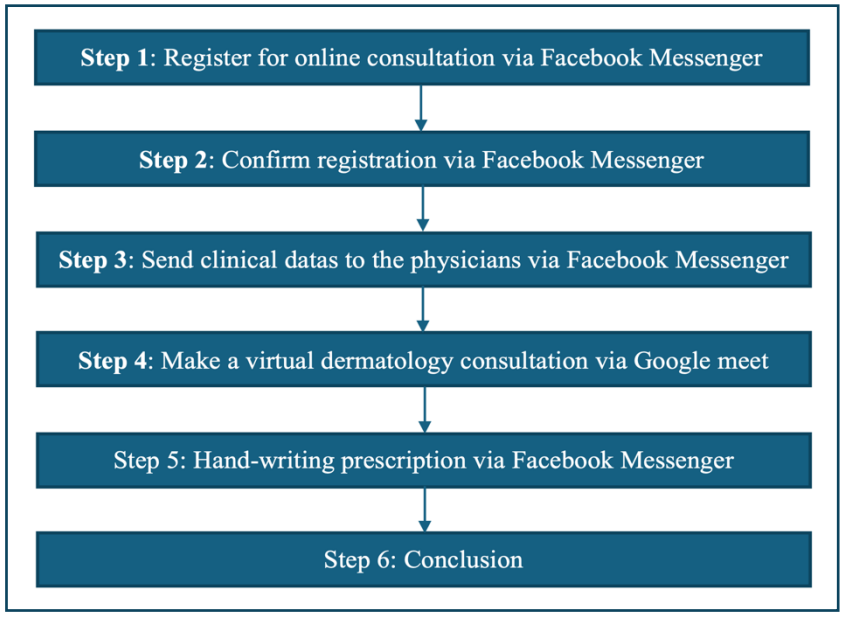

Figure 1. ***Diagram of online examination steps***

Step 1: Register for online consultation.

Patients could sign up for the examination in the message box on the Facebook page of the clinic, in which the doctors schedule work for the following week is updated every Saturday afternoon. Patients were asked to provide some personal information including: Full name, age, gender, home address, telephone number, and email address.

Step 2: Confirm registration

After checking the registration information and on-demand doctor appointments, patients upload their high-quality images of all current lesions and send a brief medical history. This data was reviewed by a dermatology consult team and patients could be asked to resend if needed.

Step 3: Send clinical data to the physicians.

All information will be sent to the doctor for review before making a virtual consultation.

Step 4: Make a virtual dermatology consultation via Google Meet.

The call was made via Google Meet to examine in more detail, recheck some data, and provide a diagnosis with appropriate pieces of advice.

Step 5: Treatment

The hand-writing prescriptions will be sent to patients via messages box and demonstrated how they work by doctors. Physicians summarise key points throughout the consultation to ensure that nothing is misunderstood.

Step 6: Conclusion

Doctors will recap the main points and ask the patient if anything needs to be clarified and decide the way of the next consultation (face-to-face or remote). Nursing team members schedule a follow-up appointment if necessary.

Statistics

We collected demographic data, as well as the diagnoses made by the dermatologist who made the virtual consultation (VC) from May 2021, until March 2022. Each patient had a code for gender and age summary. Besides, each diagnosis from all patients was used for case data.

In order to compare the two medical examination methods as well as find differences in the number of patients before the epidemic, data from face-to-face consultation (FTFC) at the dermatology clinic in Hue University of Medicine and Pharmacy Hospital had been assembled at the mentioned period as above and before the COVID-19 pandemic occurred (BFTFC) (from May 2019 to March 2020) (Figure 2).

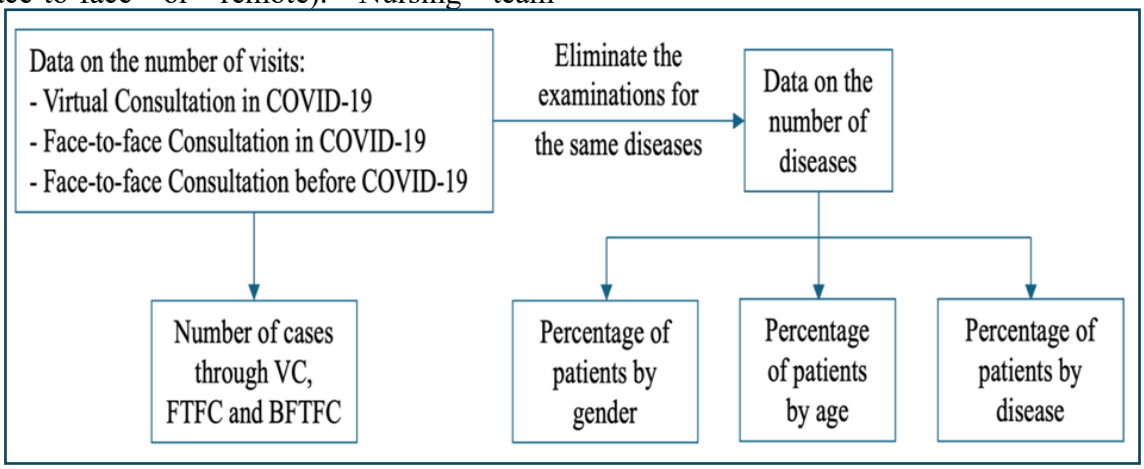

Figure 2. ***Diagram of data processing steps***

- Number of cases: Each patient visit was counted as one visit, whether in-person or online examination.

- Number of diseases:

+ If a patient came for examination many times with the same disease, only one disease would count.

+ If this patient visited for consultation many times with various problems, then it would be listed with different diseases.

The collected data were stored in MS Excel. SPSS 27.0 software was used for the analysis and processing of the data.

III. RESULTS

During the launch of the online examination program, there were 1014 virtual consultation calls in parallel with 2242 clinical in-person visits at the clinic.

The total number of medical examinations in that period was much less than in similar months before the COVID-19 epidemic, specifically 6370 dermatology in-person visits. Besides, the number of cases climbed to around 175 telemedicine visits after one month of starting the online examination program, followed by a considerable drop to over 75 cases; while that of FTFC experienced a gradual decrease until September 2021. Since then, the figure of VC continued to fall significantly and the number of clinical visits went up to around 360 (Figure3).

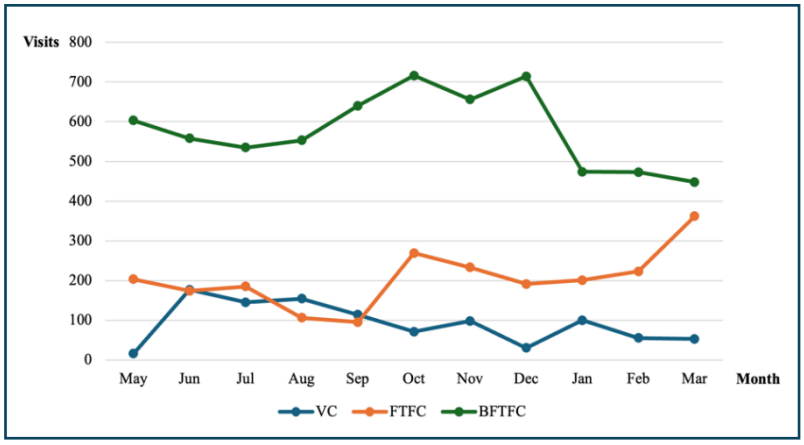

Figure 3. ***Number of cases through VC, FTFC, and BFTFC from May to March in the following year***

During the survey period from May 2021 to March 2022, after eliminating the examinations for the same diseases, there were 643 virtual consultations and 1700 face-to-face consultations. Before the COVID-19 pandemic, 4962 face-to-face examinations were collected.

The proportion of female patients was higher than that of males at any time, the difference was more pronounced in the VC group (68.1%) (Figure 4).

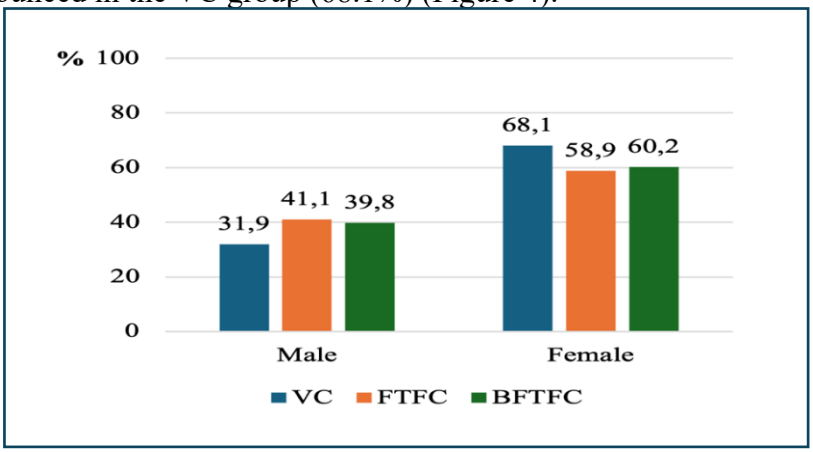

Figure 4. ***The percentage of patients using VC, FTFC, and BFTFC, by gender***

In general, patients in the age group from 16 to 30 accounted for the majority, especially those of VC made up three-quarters of the total. Opposed to FTFC and BFTFC, the percentage of age group 46-60 and <60 was only 1.9% and 0.5% respectively (Figure 5).

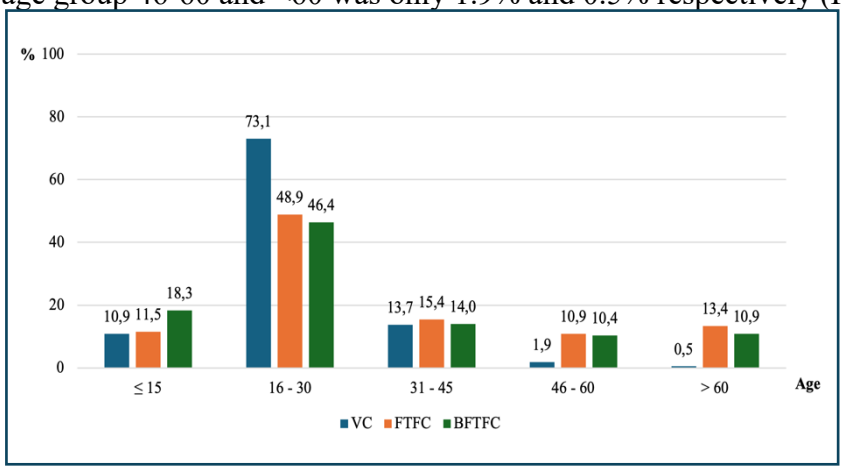

Figure 5. ***The proportion of patients using VC, FTFC and BFTFC, by age***

It can be seen that among those mentioned disorders above, acne vulgaris was the most common disease that made patients meet dermatologists at any period of time, especially in VC with nearly 45%. Additionally, patients contacting online examination because of contact dermatitis also accounted for a significant proportion (around 10%) (Figure 6). Because other diseases in VC were uncommon and made of small proportions, we did not include them for comparison.

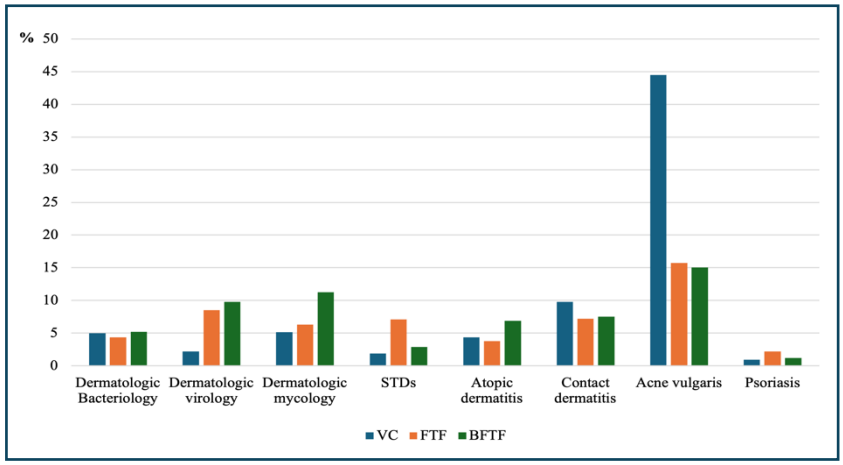

Fig-6. ***The percentage of patients using VC, FTFC, and BFTFC, by disease***

IV. DISCUSSION

The way medicine is practiced globally has altered as a result of COVID-19. The unusual scenario has compelled healthcare professionals in many disciplines of practice to think carefully about how to ensure continuity of services in the shifting landscape [6].

Dermatology has been a suitable choice for telemedicine because of its reliance on visual inspections, and this was seen clearly through the number of calls between the dermatology clinic and the others. Previous

studies have shown the most common reasons for making a telehealth appointment were for a new rash, eczema, and psoriasis [7,8]. This result was different from some reports, in which acne vulgaris is the most popular problem, which was appropriated with the data of group age (Fig-2). The studies reporting experiences with teledermatological services during the pandemic demonstrated that teledermatology can be used to continue the care of chronic dermatological patients (acne, chronic inflammatory dermatoses), at least for a short period of time, to which the studies were limited due to necessity [9,10]. The same applied to the acute management of oncological patients with dermatological problems, as well as discussions with individuals suspected of having COVID-19 [6]. We also discovered that specific disorders (acne, psoriasis, eczema, rashes, rosacea, and lesions of concern) were particularly accessible to teledermatology, whereas other visit types (entirely body skin assessments) were not reliably completed by this modality.

However, the diagnostic precision of teledermatology may be limited during initial consultations, as any extra diagnostic procedures such as skin biopsies that may be needed need physical consultation. Some patients who have skin cancer follow-up, genital dermatology, hair and scalp disorders, oral disease, or psychodermatology, should have a face-to-face consultation to perform full examinations, exact diagnosis, and provide treatment advice. One of the most difficult aspects of virtual dermatology is treating patients with severe, persistent inflammatory illnesses including atopic dermatitis and psoriasis. Proper assessment necessitates the use of FTF scoring systems, such as Eczema Area and Severity Index, Psoriasis Area and Severity Index, and lesion count [11,12].

In practice, we feel that the main group of patients who had acne vulgaris, contact dermatitis, or other chronic inflammatory disease is able to control well on medication through teledermatology (e.g. acne vulgaris with topical therapies, psoriasis stable on methotrexate, etc.) and therefore some of them require little more than a review of blood results and a repeat prescription. Recently, the Ministry of Health of Vietnam has issued a new circular regulating the list of diseases that are allowed to be examined and treated remotely. Among the 4 groups of licensed dermatological diseases including dermatologic bacteriology, dermatologic virology, dermatologic mycology, and dermatitis, specific licensed diseases such as contact dermatitis, atopic dermatitis, chickenpox, shingles, and dermatophytosis have been also the diseases we recorded accounting for a large proportion, moreover, the incidence is higher than that of other diseases.

As the COVID-19 pandemic situation changed positively, in-person visits also began to increase at our clinic. However, we continued to have a few of our visits performed virtually. Patients have received medical care via virtual platforms arduously due to limited technological knowledge, especially elderly patients, and those with wireless connection barriers may be experiencing unequal access to remote care during the pandemic. This can be seen quite clearly in the age distribution participating in virtual consultation, only a small number of elderly patients examine online, and usually these patients need the help of relatives to access the website. Additionally, some

respondents did not like telehealth due to a lack of physical touch and felt they received an inadequate assessment [7].

We recognize several limitations for the broader community: electronic medical record platform differences, costs of adopting teledermatology, and inability to conduct procedures. However, if these obstacles can be improved, this could still be a promising and useful medical treatment modality in the future.

V. CONLUSION

Virtual dermatology consultations hold great promise to develop access to high-quality dermatologic care in the future. While this way is not a replacement for traditional practice, telemedicine has proven to be a reliable alternative to face-to-face assessments, especially when it comes to a scenario like the ongoing COVID era when a majority of the population is under lockdown and access to healthcare has been minimized.

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