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Profile of The Incidence of Onychomycosis at RSUD Dr RM Djoelham Binjai for Period January 2017 – December 2021

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ABSTRACT

Onychomycosis is a disease caused by a fungal infection of the base plate and nail matrix which can be caused by dermatophytes, candida and other fungi. This study is a retrospective descriptive study to describe the results of the onychomycosis patient identification examination. The population in this study were all patients with new onychomycosis visits recorded in the medical record data of RSUD Dr. RM Djoelham Binjai for the period January 2017 – December 2021 which matched the inclusion criteria. Data collection uses secondary data with total sampling technique. The results showed that the highest prevalence of onychomycosis patients aged 51-60 years was 12 patients (30.8%), the average female sex was 23 patients (58.9%) and work as a farmer was 16 patients (40.5%). It is recommended to patients to always maintain personal hygiene and from damp and closed conditions.

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INTRODUCTION

Fungi are plants that do not have chlorophyll, are heterotrophs, have eukaryotic cells. Formed from filaments or threads and cell walls are thick and rigid because they contain chitin fibrils and develop sexually and asexually. Because they do not have chlorophyll, fungi do not make their own food. so it depends on other individuals. (Zulneti, 2020) (Winda, 2017) .

Onychomycosis is a non-life-threatening fungal infection. This cuckoo disorder interferes with a person's cosmetics due to nail damage. (Puspita et al., 2021) (Amanda, 2019) This disease attacks the nail plate, which can be caused by dermatophytes , *non*- dermatophyte molds and yeasts. It comes from the Greek words *onyx* meaning fingernail and *mykes* meaning fungus. The fungus affects the nail plate, namely the nail plate, nail bed (*nail bed*) and the nail matrix. It is the most common case encountered, almost 50% of diseases or disorders of nail damage to the nails and 30% only cause damage to the nail surface. This disease causes disruption of nail color , onycholysis and thick nails. (Amanda, 2019). The incidence in the population is 2%-13%. (Kim et al., 2018). About 14%-28% occurs in people over 60 years old and is mostly found on toenails (Zhong et al., 2019)

Infectious diseases by fungi are often encountered in countries with tropical climates , because this is due to the humid and hot air making it very suitable for fungi to develop. Lack of awareness

of cleanliness can be a supporting factor for fungal infections. Including nails can be infected by a fungus known as onychomycosis. (Majawati et al., 2019). Fungi can live on a variety of substrates, in a variety of habitats variety, and spread can be through spores that are free to fly in the air, in soil, or the surface of objects and plants, Diseases caused by fungi will not become serious if caught early and treated quickly. (Dawn, 2020) (Yadav et al., 2019) .

Dermatomycosis caused by fungi belonging to the *dermatophyte* group from 3 genus, is genus *Trichophyton, Microsporum* , as well as *Epidermophyton Dermatophyte* fungi infect humans classified as source on habitat namely: 1. *Anthrophophilic* dermatophytes, which are in contact with humans and are transmitted either by direct contact or through contaminated vomit.2. *Zoophilic* dermatophytes, which are related to these animals and fungi transmitted to humans either through direct contact with animals for example pets or materials derived from such animals such as wool.3. *geophilic dermatophyte* , is a fungus that comes from soil and transmitted to humans through direct exposure to soil or to animals containing soil or dust. Usually the clinical indications caused by the group *zoophilic* as well group *geophilic* on man character chronic as well as again and more recover easily. *Dermatophytes* which *anthropophilic* most main hit man because choose humans as their permanent hosts. This group of fungi can causejourney disease so chronic and residif the reason for the rejection response body which very light. Example mold *anthropophilic* that is mold *Microsporum audouinii* as well as *Trichophyton rubrum* recovered. *Dermatophytes* which *anthropophilic* most main hit man because choose humans as their permanent hosts. This group of fungi can causejourney disease so chronic and repetitive the reason for the rejection response body which very light. Example mold *anthropophilic* that is mold *Microsporum audouinii* as well as *Trichophyton rubrum. Non-* dermatophyte molds are naturally found in soil and plant pathogens. (Dawn, 2020).

Fungal transmission can be direct or indirect. Transmission directly through fomites, epithelium, and hair containing fungal cells from humans, animals, or soil or indirectly through plants, wood seized mushrooms, objects or clothes, dust or water (Dawn, 2020)

Fungi *Trichophyton rubrum, Trichophyton mentagrophytes and Epidermophyton floccosum* is a type of fungus that causes onychomycosis, while *Microsporum gypseum* is generally found in hair and skin (Anandam & Sateesh, 2020).

This nail fungus can be caused by dermatophytes (tinea unguium) and non-dermatophyte molds and yeast. As much as 51.6% are caused by nondermatophyte fungi. (Shenoy 2020) Nearly 90% of onychomycosis occurs in toenails and fingernails as much as 75% is caused by dermatophytes, generally caused by *Trichophyton rubrum (70%)* and *Trichophyton mentagrophyte (19.8%) s* While the rest were caused by *Epidermophyton floccosum,* (2.2%), *Trichophyton tonsurans* . *Trichophyton verrucuosum* . *Microsporum species, Trichophyton soudanense* , *Trichophyton equinum* and *Arthoderma species* Meanwhile, for non-dermatophyta *mold* caused by *Aspergillus species, Scopulariopsis species , Fusarium species, Acremonium species, Syncephalastrum species, Scytalidium species, Paecilomyces species, Neoscytalidium species, Onychocola species, and Alternaria specues* , For Onychomycosis caused by *non-* dermatophyte *molds accounted* for 10% of all cases. While onychomycosis caused by *yeast* as much as 70% is caused by *Candida albicans* , while other types of *Candida* are *Candida tropicalis* and *Candida parapsilosis. Patients* with chronic mucocutaneous candidiasis and immunodeficiency are often infected with candida, especially on the fingernails. (Leung et al., 2019) (Aryasa et al., 2020).

Several risk factors such as age, weather, occupation, travel and hygiene play a role in development. In addition, several conditions such as peripheral arterial disease, smoking, nail trauma, poor nail hygiene and a family history of onychomycosis (a source of transmission in the family) play a role. hyperhidrosis, environmental and air situation, which humid, crowded environment, low socioeconomic, obesity, systemic disease, uncontrolled use of antibiotics, steroids, cytostatic treatment. (Fajar, 2020) (Rana et al., 2017) . Also includes previous fungal infections in the body such as tinea pedis, chronic paronychia, hyperhidrosis, wearing narrow and closed shoes, physical activities such as sports and *fitness* , trauma to the nails, broken nails, sharing swimming

pools, living with someone who is infected with fungus, poor hygiene, genetic factors such as immune disease, deficiency, organ transplantation, diabetes mellitus, psoriasis, smoking and vascular insufficiency in the veins or circulation bad blood in the legs. (Leung et al., 2019) (Rahma, 2020) . In addition, the work environment and type of work are factors that cause onychomycosis. (Artha & Oktasaputri, 2020).

The prevalence of onychomycosis worldwide in the population is 5.5%. In 2013 reports show the prevalence of onychomycosis in North America and Europe as much as 4.3%, and the incidence continues to increase. The use of closed shoes is more common in adults than children. The prevalence in North America in children is 0.4% and for adults over the age of 65 years by 35%. Onychomycosis caused by candida in women is often found on the fingernails while in men it is often on the toenails (Leung et al., 2019).

Onychomycosis occurs in 10% of the world's population, 20% -40% of all nail disorders and 30% of fungal infections , can occur in all races and the prevalence depends on age, climate and occupation. Ages 60 years and over experienced 25% onychomycosis and 50% over 70 years. At the H Adam Malik General Hospital in 2009 - 2012 the proportion of onychomycosis was 4% of all skin disease visits. (Amanda, 2019) . It often occurs in adults and affects 8% of patients who come for treatment. (Li et al., 2018). The disease is increasing in both adults and children. (Rana et al., 2017) . The percentage of cases of onychomycosis in tropical countries is around 3.8% and in subtropical countries and those with extreme climates it is 18%. (Nurfadillah et al., 2021)

In Indonesia the prevalence is 3.5 % -4.7% of all fungal infections. (Karmila et al., 2020). There are more men than women. Other predisposing factors are parents, genetics, tinea pedis interdigitalis and *mocassin foot* . (Amanda, 2019)

Mushroom abilities, including the ability to adapt to the human body. Chemical and physical structures are materials for defending themselves against fungi , such as neutrophils, monocytes and macrophages as materials for defending themselves against fungal pathogens. Neutrophils directly attack pathogens by various microbicidal processes. The oxidative mechanism of neutrophils is capable of killing *Trichophyton sp* ., suggesting that they may have a role in defense against dermatophyte infections, which cause superficial fungal infections. (Amanda, 2019)

Onychomycosis is an infection of the nails due to contact with dermatophyte fungi, *non*-dermatophyte *molds* or *yeast* . This is because the nails do not have cell-mediated immunity that is effective against fungal infections. Meanwhile, fungi produce enzymes as proteolytic, keratolytic, and lipolytic materials that are always active. helps to destroy the keratin in the nail plate to make it easier for fungi to enter the nail. Damage to the nail guard is a risk for infection in onychomycosis. The form and site of invasion of the fungus cause different forms of onychomycosis. The occurrence of *biofilm* formation in fungi, causes the possibility of fungi to avoid antifungal treatment, so that it can cause resistance to antifungal treatment. (Leung et al., 2019). The fungus will infect the keratinized tissue of the skin, hair and nails on man as well as animal. Nature *dermatophyte* is keratinophilic (*keratolytic mycelium fungi*), creating the enzyme keratinase, does not grow at 37ºC. (Dawn, 2020)

The history of onychomycosis can be diagnosed by clinical features but international guidelines recommend laboratory tests to initiate systemic treatment. (Li et al., 2018) physical examination , the infection may occur in the fingernails and toenails. Onychomycosis consists of several types, which show a white or yellow nail color. The nail plate can be purple, green or black in color. Subungual hyperkeratosis is found, separation of the nail from the nail plate (onycholysis), and thickening of the nail plate (onychauxis) . (Leung et al., 2019)

Look The destruction of the nails is inflamed, including the nails become thicker and visible from the base the attachment or *onycholysis,* damaged, no flat as well as no shiny again,and change pattern plate nail so white, yellow, chocolate, until dark (Dawn, 2020)

Some of the clinical features of onychomycosis, on physical examination, are: 1) Distal lateral sub ungual 2) Proximal sub ungual 3) Superficial white 4) total dystrophy. (Amanda, 2019) (Leung et al., 2019)

1) Sub *ungual distal lateral type*

Figure 1. Distal lateral sub ungual type. (Leung et al., 2019)

Type shows bands or stripes of white, yellow , orange or brown on the nail plate. Often seven to ten times on the toenail. The type that occurs most often. Fungal invasion starts from the hyponychium under the nail plate and then spreads to the nail plate. The fungus will move through the nail lines or spikes. (Leung et al., 2019) (Ago Harlim, 2017) . This type is often caused by *Trichophyton rubrum* and *Trichophyton mentagrophytes* . On physical examination, the nail picture was found in the form of nail discoloration in the distal and lateral areas in the form of yellow, whitish and brownish at the corner of the lower nail . (Karmila et al., 2020) . At the distal / under the nail, hyperkeratosis, onycholysis and or onychauxis are found on the lateral and distal nail. (Leung et al., 2019) (Management, 2021)

2) *Proximal sub ungual type*

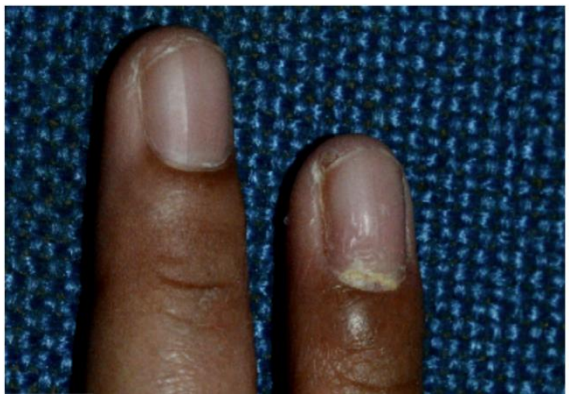

Figure 2 . *Proximal sub ungual type* . (Leung et al., 2019)

The development of fungal invasion begins along the lower surface above the lower fold of the nail cuticle and extends distally, a transverse white cloudy line with clear boundaries is seen. (Karmila et al., 2020) . This type of onychomycosis is often caused by *Trichophyton rubrum, Trichophyton megninii* and Fusarium *spp* . (Ago Harlim, 2017) On physical examination, a proximal nail was found in the form of leukonychia in the proximal area where the nail grows. This type of onychomycosis is often associated with immunodeficiency patients such as AIDS *(Acquired Immunodeficiency Syndrome)* . (Leung et al., 2019) (Amanda, 2019)

3) *White Superficial*

Figure 3. *White superficial* . (Leung et al., 2019)

This type of onychomycosis is found on the upper surface of the nail plate, which is white due to a fungal infection that directly infects the nail. (Karmila et al., 2020) . The main cause of this type is the fungus Trichophyton mentagrophytes , also Trichopyton interdigitale. On physical examination, white spots or patches appear and look dull on the nails and these white spots or spots can be scratched easily. (Leung et al., 2019) (Ago Harlim, 2017) . This type has a distinctive appearance in the form of a "*white island*" firmly demarcated on the nail surface, growing radially and confluently covering the entire nail surface. Fungal growth spreads through the horny layer to the nail bed and hyponychium. Nails will become rough, soft and brittle (Amanda, 2019)

4) *Total dystrophy*

Figure 4. Total dystrophic . (Leung et al., 2019)

This type of onychomycosis is the end of any type of onychomycosis, in this type the entire nail is damaged. Nails look damaged and crumbled which appear yellowish in color, thick and brittle. (Leung et al., 2019)

The diagnosis of onychomycosis can be seen from discolored nails, the presence of debris, hyperkeratosis of the subungual nail, onycholysis and onycholysis. From the clinical picture, 66%-75% of the physical examination of the nails can be established. (Leung et al., 2019) . And to confirm that this is onychomycosis and its causes, direct microscopic examination, examination by culture or culture for identification of the causative fungus, dermoscopy and histopathology can be carried out. (Karmila et al., 2020)

Onychomycosis can be established by examination : 1 . dermocopy, the results are fast, *non-invasive* and highly effective in differentiating other nail damage diseases. On this examination, a *spike was found* in the damaged nail area, the subungual hyperkeratosis area was also visible, where a white longitudinal line was also seen. or yellow, leukonychia, chromonychia also seen parallel lines with various colors *(aurora borelia)* and a picture of a fungus. On the other hand, if a transverse appearance of onycholysis is seen, it is caused by minor trauma to the damaged nail. (Leung et al.,

2019) 2. Direct microscopic examination i.e. fungal culture is considered the gold standard technique in the diagnosis of onychomycosis, potassium hydroxide (KOH) test is the method used to confirm onychomycosis. (Ago Harlim, 2017) (Karmila et al., 2020) . There is also a histopathological examination using direct microscopic examination of tissue sections that have been stained with specific dyes to visualize fungal growth patterns, and indicate the presence of dermatophytes. This examination uses several methods, namely *Periodic acid–Schiff staining* (Karmila et al., 2020). PAS) is a histopathological staining of fungal polysaccharides performed on nail plate biopsy specimens. Gomori's Methenamine Silver (GMS) staining is another common histopathological technique. The principles of GMS staining are similar to those of PAS staining , but superior to that of PAS staining. *Polymerase Chain Reaction* (PCR) is an in vitro DNA synthesis and amplification technique. Can identify dermatophytes directly on skin, hair and nails. (Leung et al., 2019)

Differential diagnosis of onychomycosis among others , namely:

1. Lichen planus of the nail is a change in the nail in the form of longitudinal splitting, bulging nail folds (nail pterygium), and sometimes anonychia. In lichen planus the nail plate is thinned and lichen planus papules can affect the plate skin.
2. Nail psoriasis accounts for nearly 50% of psoriasis cases. is a chronic inflammatory skin disease with a strong genetic basis with changes in the growth of the fingernails and toenails , seen in the form of onycholysis, salmon patches, subungual hyperkeratotic and piiting nails, and visible nail abnormalities such as trachochia and other non-specific signs such as paronychia. and hemorrhagic in the nails. 3) Darier white disease is an autosomal dominant disorder caused by a calcium pump disorder. Hands and or nails are involved in >96% of patients. Characteristics are nail fragility, *longitudinal split* with pain, onycholysis is seen and the entire nail is usually affected. (Princess, 2017)

The treatment of onychomycosis is still not completely eradicate the infection even though the treatment is long. Laboratory results on onychomycosis are needed before treatment is carried out so that it is more cost effective and avoids misdiagnosis, because oral antifungal treatment has side effects. Treatment of onychomycosis is known to be difficult because the fungus has a natural nature to penetrate the nail plate, it takes a long time to heal, patients Several treatment options for onychomycosis are oral and topical antifungals including nail lacquer, combination therapy, laser, photodynamics, and nail removal (in very thick nails and chronic onychomycosis) (Leung et al., 2019) (Yadav et al., 2019)

Drugs for onychomycosis are : I. Oral antifungals are the gold standard in nail fungus for children and adults. such as: 1. Terbinafine group of allilamine, is fungicide. The dose for BB (weight) < 25 kg, 125 mg a day, 25 kg-35 kg, 187.5 mg a day, BB > 35 kg 250 mg a day . The side effects of the drug are headache, taste disturbance, dermatitis, heartburn , nausea, vomiting. This drug is effective for the treatment of toenail fungus. While itraconazole used for onychomycosis caused by non dermatophytotic molds (molds) and yeasts (candida) if the patient is not effective against terbinafine, the dose of this drug is children < 20 kg, 5 mg / kg per day, body weight (BB) 20-40 kg, 100 mg per day > 40kg, 200mg per day for a week every month, while for adults for 3-6 months. The side effects of this drug are headaches, digestive disorders , increased hyperglycerides, impaired liver function, ventricular dysfunction. In addition to the two drugs above there is oral fluconazole which is used in Europe but this drug is not used in the *United State Food and Drug Administration* (FDA) for onychomycosis. The dose of the drug is used for children 3-6 mg/kg per week, adults 150 mg per week in the United States , Canada and Australia, this drug is used if the patient does not tolerate terbinafine and itraconazole. Other antifungal drugs such as griseofulvin, this drug is not recommended in many countries such as Canada and is not recommended for the treatment of onychomycosis. Likewise, ketoconazole is not recommended for the treatment of onychomycosis which can be toxic to the liver. (Leung et al., 2019) .Treatment with oral terbinafine and itraconazole can reach 70.5% and recurrence of the disease is 10%-53%. (Zhong et al., 2019) . In a study the treatment of onychomycosis of the toes with termisil tablets 250 mg / day for six weeks gave good

results. (Anandam & Sateesh, 2020) . And it is reported that it can also be given to pregnant women and patients with immunosuppressants (Lipner & Ko, 2018)

Other drugs used for onychomycosis are topical or external drugs with a liquid material that is smeared on the nails. These drugs should be avoided if used together with nail polish. This drug is used for the treatment of fingernails and toenails, this drug is long lasting useful for beauty and protection of the nails.(Kanchan 2019) 5% nail solution).Ciclopirox (Ciclodan,Penlac,Loprox /8% *nail lacquer* or hydrolacquer), this drug is effective on all types of dermatophyte fungi and yeast.Amorolfine (Curanail,Loceryl,Locetar,Odenil/5% *nail lacquer* and terbinafine (Lamisil /10% nail solution).These drugs have very few side effects such as redness and heat when applied. And the treatment can take 48 weeks or more, because these drugs are less adequate to penetrate the nail layer compared to However, this drug can be used for moderately infectious onychomycosis such as 50% infected nails or less than 3 fingernails or in superficial onychomycosis or in patients who have contraindications for and oral therapy. Topical antifungal treatment is used in addition to oral medication in order to provide a better drug- cooperative effect for healing rates. Topical or anti-fungal topical medication gives the effect of growing nails faster because the nail plate in children is thinner than adults. (Leung et al., 2019) . Oral antifungal drugs are the *gold standard* for the treatment of fungi, but around 25%-40% do not comply with medication and are contraindicated for liver and heart disease. (Kim et al., 2018) . And another type of therapy is laser, although data on the treatment of onychomycosis with lasers is still lacking, the heat generated by the laser can kill cells at an average wavelength of 750-1300 nm with a short duration. and shorter than the thermal relaxing time of mushrooms. (Leung et al., 2019) Several lasers use long wavelengths for the treatment of onychomycosis such as long pulsed neodymium-doped yttrium aluminum garnet (Nd:YAG at 1064 nm), and the results are excellent in white superficial onychomycosis and other types of moderate onychomycosis. In addition, the use of lasers can be used to control the side effects of oral antifungals, (Zhong et al., 2019) (Kim et al., 2018) . Diode laser , fractional carbon dioxide (CO_2) laser. Laser treatment is not as effective as oral or topical therapy and may be used if the patient cannot be treated with oral medications. The other treatment for onychomycosis is photodynamic therapy using specific light with certain waves. The fungus will absorb the photosensitizer material so that it is more susceptible to the destruction of apoptosis or necrosis of the surrounding healthy tissue. The photosensitizer material is 5-Aminolevulinic Acid (5-ALA), Methyl Aminolevulinate(MAL), porphyrins, aluminum-phthalocyanine chloride, methylene blue, toluidine blue, and rose bengal. This treatment can cause pain, red patches, heat, swelling and blisters. In some studies this treatment is effective for onychomycosis. There are also other treatments besides some of the treatments described above, namely treatment by performing abrasions, thinning the sore nails such as using keratolytic materials such as urea, salicylic acid, used in onychomycosis which has swollen nails. damaged and thickened. (Leung et al., 2019) . Another treatment is avulsion of the nail. (Amanda, 2019). The treatment of fungal toenail infections looks long and takes a long time in proximal nail infections for 3-4 months and if it has expanded it can reach 12-18 months. (Lindblad et al., 2019) But there are also those who say that for onychomycosis on the hands the treatment reaches 6 months, while on the feet it reaches 12 months with nail growth of 2-3mm per month for fingernails and 1mm for toenails. (Lipner & Ko, 2018) . In a study on candida onychomycosis, treatment with pulse therapy for 7 days and rest for 3 weeks for 2 beats showed success. (Mamuaja et al., 2017) Topical drugs are the best choice for patients with contraindications to systemic disease or contraindications to systemic drugs. (Management, 2021)

Fungi multiply rapidly in hot and humid environments, so sufferers are advised to use open shoes, keep feet dry, wear sweat-wicking socks, trim nails. Do not use nail equipment at the same time such as nail clippers, nail files , etc. etc. (Fahmi et al., 2021) If a patient is found with tinea pedis, it must be treated, if it is found that a family member has tinea pedis and onychomycosis must be treated. As a precaution so that onychomycosis does not recur, some researchers suggest giving topical antifungal therapy once a week or twice a month for two years after treatment due to the

high risk factors for recurrence. After wearing shoes that are not made of leather, they should be washed with hot water and dried in ultraviolet light. (Leung et al., 2019) . Several studies have shown that workers who do not wash their feet properly are more prone to suffer from onychomycosis (Mulyati & Zakiyah, 2020) . And also to be careful with the use of used clothes, including underwear and socks that are sold in the market because the research found fungal colonies. (Rahma, 2020)

Onychomycosis can be preceded by fungal infections of the skin such as tinea pedis , tinea corporis and tinea cruris. Fungal infections can spread to the nails. In some circumstances it can cause bacterial infections such as cellulitis, paronychia, especially in immunocompromised patients in diabetic patients. Onychomycosis can cause interference with the nails themselves, when standing, walking or daily activities and if this condition is not treated it can cause discomfort, pain, paresthesia, and curved nail shape disorders so that patients feel inferior, because the nails look ugly and disturbed. social relations, especially in women, causing the quality of life of sufferers to be disturbed as well. (Leung et al., 2019)

Generally, the prognosis is good if treated properly and optimally. Straight lines on the nail margins in onychomycosis are caused by non-dermatophyte mold fungi, namely Fusarium species. The lack of response to the treatment of onychomycosis to treatment includes because the patient does not comply with treatment, advanced age, comorbidities, if the nail matrix is damaged, hyperkeratosis of the subungual nail is more than 2 mm, and immunodeficiency. The failure of topical antifungal therapy occurs because the fungal infection has entered the nail plate. In studies, onychomycosis recurrence was reported between 10%-53%, and recurrence or reinfection returned at least after 3 years of treatment. (Leung et al., 2019) . Due to the difficulty of curing this nail fungus infection with monotherapy treatment, a combination treatment in the form of oral and topical systemic is used which shows better efficacy, but we must also pay attention to the time of treatment and the clinical picture after treatment can different. (Khamidah & Ervianti, 2018).

RESEARCH METHOD

Judging from the high incidence of onychomycosis and it is still commonly found in people in tropical and humid climates such as Indonesia, the author wants to conduct research on new patients who are treated for the first time with complaints of damaged nails to the health and skin science polyclinic at RSUD Dr. RM. Djoelham Binjai who was diagnosed with onychomycosis through anamnesis and dermatological physical examination and recorded in the medical record. Complete medical record records containing age, gender and occupation. Data analysis in this study used univariate data analysis, namely data analysis that aims to determine the distribution of the frequency of onychomycosis spread based on age, gender and occupation.

RESULTS AND DISCUSSIONS

Based on the research results obtained from the medical records of onychomycosis patients for the period January 2017 – December 2021, it was found that the characteristics of onychomycosis patients based on age, gender and occupation are described in the table below.

Table 1. Distribution of Onychomycosis Frequency Based on Age Group

No	Jobs	N	%
1	Farmer	16	41,03
2	Employee	1	2,56
3	Student	1	2,56
4	Entrepreneur	2	5,13
5	Irt	12	30,77
6	Collage Student	2	5,13
7	Employee	2	5,13

8	Not Yet In School	0	0,00
9	Laborer	1	2,56
10	Construction Workers	2	5,13
	Total	39	100,00

Based on table 1 above, the results of the study show that the incidence of onychomycosis based on the age group for the period January 2017-December 2021 from 39 respondents showed that the age group was mostly adults, namely in the age group 51-60 years 12 patients (30.8%)

Table 2 Distribution of Onychomycosis Frequency by Gender

No	Year	Gender				Amount
		Male		Female		
		N	%	N	%	
1	2017	4	25,00	6	26,09	10
2	2018	3	18,75	5	21,74	8
3	2019	5	31,25	5	21,74	10
4	2020	3	18,75	4	17,39	7
5	2021	1	6,25	3	13,04	4
Total		16	100	23	100	39

Based on table 2 above, the results of the study show that the incidence of onychomycosis by gender for the period January 2017 – December 2021, shows that the incidence of onychomycosis by gender is the most out of 39 female respondents as many as 23 patients (58.9%) and male male totaled 16 patients (41.1%)

Table 3. Distribution of Onychomycosis Frequency by Occupation

No	age group (year)	N	%
1	0-10	0	0
2	11-20	1	2,5641
3	21-30	2	5,1282
4	31-40	5	12,821
5	41-50	7	17,949
6	51-60	12	30,769
7	61-70	10	25,641
8	71-80	2	5,1282
Total		39	100

Based on table 3 above, the results of the study indicate that the incidence of onychomycosis is based on occupation the period January 2017-December 2021 from 39 respondents showed the most with farmer jobs as many as 16 people (40.5%) .

The results of research by researchers at Dr Djoelham Hospital showed that the incidence of onychomycosis based on the age group for the period January 2017-December 2021 from 39 patients showed that the age group was mostly adults, namely in the age group 51-60 years as many as 12 patients (30, 8 %). In a study conducted by Esther Sri Majawati et al. (2019) on the Prevalence of Onychomycosis in Fish Traders in Kopro Market West Jakarta, from 15 samples, the most patients

were aged < 64 years (86.7%) and > 64 years (13 ,3%), the results are not in line, from the research the researchers found that the most at the age of 51-60 years followed by the age of 61-70 years. In a study conducted by Gustina Putri (2017) with the title Quality of Life in Onychomycosis Patients, the highest number was found at the age of 50-59 years as many as 16 patients (37.2%), in line with the results carried out by researchers. According to Mahwash Rana et al (2017) with the title Frequency of associated factors of onychomycosis with a sample population of 120 people found the age most often suffering from onychomycosis was at the age of <60 years as many as 113 people (94.2%) and > 60 years as many as 7 people (5.8%).

According to the researchers, this may be due to the fact that with increasing age , skin disorders become more frequent so that protection against substances such as irritants and infections is faster due to slower nail growth and thinning of the nail plate, where the nail plate also functions as a barrier to protect against microorganisms that enter. , so that the thinning of the nail plate will facilitate the occurrence of onychomycosis.

Ages 50 years and over, including the elderly where at this age there are changes in the body's immune function, including fighting infection against (Putri et al., 2018) In children, onychomycosis is rare, possibly associated with exposure to relatively rare causes, excessive nail growth. faster, and the prevalence of onychomycosis is low. (Princess, 2017)

The results of research by researchers at Dr Djoelham Hospital showed that the incidence of onychomycosis in new visiting patients was based on gender for the period January 2017 - December 2021, indicating that the incidence of onychomycosis based on gender was the most out of 39 female respondents as many as 23 patients (58 ,9%) and 16 patients (41.1%). In a study conducted by I Gusti Agung Dwi Karmila et al (2020) with the title Profile of Onychomycosis in Elderly Patients at the Sanglah Bali Central General Hospital from 11 patients diagnosed with onychomycosis showed that 5 female patients and 6 male patients, the results of the researcher's research is not in line with that studied by the researcher. Research conducted by Esther Sri Majawati et al.(2019) on the Prevalence of Onychomycosis in Fish Traders in Kopro Market West Jakarta from 15 samples found 53.3% of onychomycosis sufferers in female patients. This is in line with the results of the researchers. While the research conducted by Mahwah Rana et al (2017) with the title Frequency of associated factors of onychomycosis with a sample population of 120 people, the results were found in the most women, 97 people (80.8%) while 23 men (19 ,2%) . In a study conducted by Gustina Putri (2017) with the title Quality of Life in Onychomycosis Patients, from 43 patients, 31 patients (72.1%) were female and 12 patients (27.9%) were male, similar to the results of the researchers. more common in women. Research by Bitew and Wolde, 2019 entitled Prevalence, Risk Factor, and Spectrum of Fungi in Patient with Onychomycosis in Addis Ababa, Ethiopia: A Prospective Study, stated that the risk factors for onychomycosis were more common in women. Compared to men, some of the studies above are in line with those conducted by researchers, that there are more women than men. Meanwhile, the research conducted by Fatima Babokh et al (2021), entitled Onychomycosis in the Military Hospital Of Marrakesh; AFive -year Experience with a sample of 683 samples of 400 male samples (58%) compared to only 283 women (42%), this study is not in line with researchers tian researchers.

According to the researchers, regarding gender, this may be because women are more sensitive, less strong to pain and discomfort, so if they see any disturbances from any part of their body, it allows them to quickly see a doctor and there are times when a woman too. help her husband work to earn a living such as going to the fields or to the fields, so that in addition to working at home,

the time in contact with water or a humid place becomes longer and also if you wear closed shoes, microorganism infections can develop quickly, including nail fungus infection. is also a condition to assess the cleanliness and condition of cosmetics as well as one's appearance so that it can make people feel embarrassed and try to seek treatment. Physical , psychological, social and emotional disturbances can occur in onychomycosis patients.

The results of research by researchers at Dr Djoelham Hospital showed that the incidence of onychomycosis in new visiting patients based on work for the period January 2017-December 2021 from 39 respondents showed that the most were farmers working as many as 16 patients (40.5%). In a study conducted by Gustina Putri (2017) with the title Quality of Life in Onychomycosis Patients, the highest number was found in housewives (IRT) as much as 25.6%. many

According to researchers, this is because farmers work always in humid and wet places, maybe besides that after work the farmers may not be clean in washing their feet after work or not perfect when drying their feet, including cleanliness around nails, trauma to nails, not wearing pads . feet when working, because this is a continuous job for a long time so that fungal nail infections can develop more quickly.

CONCLUSION

Onychomycosis is a disorder that occurs in the nails and nail plate. Therefore , patients are usually the first to attend for reasons of physical beauty and can and without complaints. As the disease progresses onychomycosis can interfere with standing, walking and exercise. Patients may complain of paresthesias, pain, discomfort, and loss of or reduced social interaction and lack of self-confidence.

The most common causes of this disease are dermatophytes, non-dermatophyte molds and yeasts. The clinical picture of onychomycosis can already be established, but it is also important to carry out a physical examination of the nail and laboratory. Current treatment is in the form of oral antifungal treatment alone, topical antifungal alone or a combination of both. Treatment using laser alone is also promising or in combination with oral or topical antifungal agents. . If the nails look hard and thick, surgical therapy can be carried out and use a high concentration of urea chemical solution.

Combined treatment provides future improvements. Although the treatment takes a long time. In the study of nail fungus infection or onychomycosis that took medical record data at the RSUD dr. RM Djoelham Binjai, the results showed that the highest incidence was male, aged between 51-60 years and working as a farmer. anyone regardless of race, age, gender, occupation, etc.

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Need to maintain personal hygiene such as humidity , occlusion, trauma that can make it easier for fungi to infest the nails. Certain lifestyles, environments and occupations can facilitate onychomycosis infections, such as continuous use of closed socks and shoes, excessive exercise, use of public baths, lack of bathroom hygiene because mold can grow on the bathroom floor, lack of body hygiene, use of personal items such as towels, shoes, or nail clippers with an infected person. Patients should immediately consult a doctor , if they have nail damage and do not infect healthy nails. Help control the patient's recovery by administering doses, and explaining treatment procedures properly and correctly, as well as the patient's persistence to seek treatment will provide a good prognosis even though the period of treatment is good. long treatment.

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