

A Study on Use and Prevalence of Self-Medication in Dermatophytosis in a Tertiary Care Hospital

Dr.Mohammed Fasil Chirankal¹
Dr.Pramada Unni¹
Dr.Mohammed Hashik Puthukudi²
Dr. Rahisa Sarin K²
Dr. Afina Thachampatta³
Dr.Balasubramanian T³

Clinical pharmacist
Assistant pharmacist
Senior health data analyst
Pharmacist
pharmd internship student
Professor

CHIRANKAL (house), Koppam- Pattambi, Palakkad, Kerala

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ABSTRACT

The study was conducted to assess the use and prevalence of self-medication among the patients visited in a private tertiary care referral hospital to ascertain the growing menace of over the counter drug abuse and its implications in dermatophytosis, this was an observational cross sectional study conducted in OPD of a tertiary care hospital. Responses to a feedback questionnaire covering various aspects on usage of self-medication were obtained from 107 patients who suffered from dermatophytosis. A total of 48 patients among the 107 patients took self-medication for dermatophyte infection which contributes to 44.9% of the total population. Out of 39 male patients, only 23 (48%) patients have taken self-medication whereas 25 (52%) patients among the 43 female patients. Similarly it was found that 55.1% (59) of the population approached the physician directly when the clinical symptoms were presented. Among the different anatomical area affected tinea cruris was found to be the most prevalent followed tinea pedis. From the study, 58.3% of patients obtained medicines from nearby community pharmacies and 31.3% of patients based on the suggestion from the relatives or friends. It was analyzed that among the selected patients most of them choose antifungal drugs. Surprisingly more affected to the adolescent age group and less number of patients changes their

dosage regimen even the condition is not improved. This is the most dreadful situation may lead to chronic or treatment resistant dermatophytosis. So each population ensure their hygiene and give counselling to the population about the preventing of spreading method.

Key words: dermatophytosis, antifungal, drugs, ointment, patients

I. INTRODUCTION

According to "Centre For Disease control And Prevention", Dermatophytosis is a common skin infection that is caused by a fungus which can live on skin, surfaces and on house-hold items such as clothing, towels and bedding⁽¹⁾. The practice of self-medication for dermatophytosis is a growing menace in many rural areas of India. The mild symptoms of study, conveniently using left over medicines, ease of access to non-prescribed medication and self-diagnosing of disease symptoms were among the most important causes of opting self-medication. Dermatophytosis is a complex of disease affecting the outermost keratinized tissues of hair, nail and stratum corneum of the skin⁽²⁾. The causative agents of the infection include members of 3 Genera: Epidermophyton, Microsporum and Trychophyton. Dermatophyte infection invades the cornfield layers of the skin. The ability to colonize in the

tissues of host organisms arises from numerous factors. The natural infection is caused due to the deposition of viable arthrospores on the surface of the susceptible individuals⁽⁵⁾. The favorable environmental condition then facilitates the progression of the infection⁽³⁾. In earlier days the dermatophyte infection or dermatophytosis were treated with topical agents and in case of severe, or extensive diseases oral antifungals like griseofulvin or ketoconazole, were used. Topical therapies may have resolved issues of skin in many cases, but they do have limitations⁽⁴⁾. Many patients find it inconvenient to use hence affecting the patient compliance in the drug therapy. If oral antifungal agents are used in early or initial stages, it can prolong the clinical course of the treatment until complete cure is attained. This can cause adverse drug reaction. For example, ketoconazole when used for a long time can cause serious side-effects. For the dermatophyte infection like Tinea capitis, which is caused by the microsporum genera, griseofulvin is the drug of choice for the treatment.

II. MATERIALS AND METHODS

We conducted an observational study carried in a tertiary care hospital over a period of 6 months, commencing from December to May among the inpatients and outpatients of the dermatology department. The study was approved by the institutional ethics committee (IEC) for the proposal of the study as per the letter no: KAS/EC/2018-44 approved on 30/10/2018. During the study period all patient with dermatophytosis aged between 13-60 years, where pregnant population was excluded and who consulted for dermatology op units for the first time for follow-up. Who gave their consent were included and explain the purpose of study for each participants. A cross sectional questionnaire distributed on 107 patient who suffered from dermatophytosis. Patients with chronic illness, Geriatric and pediatric population were excluded from the study. A data collection form was obtained and validated to collect information necessary for the study which includes details like patient demographics, Self-medication behavior of patient, reason of self-medication symptom of disease which body part affected, selection of medication, checking of package insert instructions, reason of stoppage of medication, where did obtained, any adverse drug events noticed, what to do for adverse events, any other system of medication used any Improvement home remedies, current medication, self-medication etc.

III. STATISTICAL ANALYSIS

The collected data were compiled using Microsoft excel and were presented in table, graphical format using pie charts, histograms etc. The data were analyzed using Statistical package for social science (SPSS) version 30.0. Descriptive statistics was used to assess the mean for patient demographic like age group, symptoms, medication etc.

Chi square test (X^2) for association of qualitative variable in each group of the study with level of significance at 0.05.

The study was conducted in four different phases as given below

Phase 1: PREPARATORY PERIOD

The study was conducted at dermatology out-patient department of the hospital soon after the title selection and literature review, a clear detailed protocol was framed and is reviewed by the ethical committee of the hospital. Evaluation of self-medication behavior, reason of self-medication, which medication, who suggested etc. The data collection form was developed and designed to collect all the relevant information appropriate for to each patient.

Part A of this data collection form contain demographic details, MRD No, age, sex, education, and occupation and Part B of this form contain the self-administered questionnaire was formulated based on comments of guide and doctor in charge. The questionnaire contains both open ended and close ended questions it also contain a series of question which are targeted at the self-medication behavior as well as use and prevalence of self-medication in dermatophytosis. Which are help for the prevalence study of self-medication reason of self-medication, symptoms of dermatophytosis affected body part, selection of medication, checking of package inserts dosage selection of drugs, where did obtain the drug, any adverse drug reaction, use of any system of medication current medication, home remedies and self-medicated medications etc. Are identified by this data we can easily identify the prevalence of self-medication in dermatophytosis and which medication is used more commonly.

Phase II: INTERVENTION PERIOD

Developing awareness to the patient population about the self medication used for dermatophytosis. And leaflet distributed among the patient who reached to the out-patient department

of Dermatology in KIMS Al Shifa hospital for the consultation physician due to dermatophytosis

PHASE III: ANALYTICAL PERIOD

The data was entered in Microsoft excel sheet for easy references and analysis of the result were carried out later. The entire data was analyzed by using different statistical methods in consultation with statistician

IV. RESULT

Study was conducted in the outpatient department of Dermatology for a duration of six months This study aimed at finding the prevalence and use of self-medication for dermatophyte infection. The subjects were enrolled into the study based on the inclusion criteria

Distribution Based on Gender, A total of 107 patients were included in the study which involves 39 (36.4%) males and 68 (63.6%) females. Out of 39 male patients, only 23 patients have taken self-medication for dermatophyte infection whereas 25 (52%) patients among the 43 female patients have chosen self-medication. Distribution Based on Employment, From the 107 patients enrolled in the study, 33(30.8%) patients were employees whereas two-third of the population, contributing 69.2% of the total population, were house-wives as well as students. Among the 33 employed patients 20 (60.6%) were males and 13 (39.4%) were females. Similarly in the 74 patients who were unemployed includes 19 (25.7%) males and 55 (74.3%) females. According to analysis of parameters, Distribution based on self-medication, A total of 48 patients among the 107 patients took self-medication medication for dermatophyte infection which contributes to 44.9% of the total population. Similarly it was found that 55.1% (59) of the population approached the physician directly when the clinical symptoms for dermatophytosis were presented. It is to be noticed that patients who consulted dermatologist initially had taken self-medication but was unwilling to reveal when asked. Distribution based on Symptoms, Among the total population of patients who took self-medication for dermatophytosis, 40 (83.4%) patients experienced itching or appearance of raised patches while 11 (23.9%) patients experienced oozing out as well as development of blisters About 17 (35.6%) patients out of the 48 who took self-medication experienced discolouration or cracking of skin of the affected area.

Distribution Based on Affected area, Among the different anatomical area affecting

the dermatophyte infection, tinea cruris (affecting groin, inner thighs and buttocks) was found to be the most prevalent followed tinea pedis (affecting the foot). Among the total 107 patients, 70 patients were suffering from tinea cruris which included 34 patients (48.57%) taking self-medication. Similarly, 21 patients were suffering from tinea pedis which included 9 patients (42.85%) taking self-medication.

Distribution based on Medication, The different preparations used for self-medication includes steroid preparation, anti-fungal preparation, combination of anti-fungal and steroids as well as some miscellaneous agents. In this study the most commonly used medication for self-treatment is anti-fungal preparation. About 24 (50%) patients out of 48 who took self-medication have taken anti-fungal agents like clotrimazole, itraconazole, miconazole and luliconazole, followed by the combination of steroid and anti-fungal agents by 14 patients (29.1%) which are sold under the brand names Candid B. Trioderm, Fourderm etc. About 8 patients (16.7%) took steroid based preparations and 2 patients have used miscellaneous agents for self-medication. Distribution Based on Home Remedies. In the study out of 48 patients who have taken self-medication, 26 (54.2%) patients took home remedies. From the five variant of home remedies (warm water, salt water, Dettol with warm water, salt water with neem leaves, and neem water) 12 patients used salt water treatment as home remedy, However they don't agree that they have any improvement. While two among three patients who had taken warm water agreed with some improvement.

Distribution based on Source of Advice of Self-medication. From the study, patients who took self-medication, obtained the drugs mostly (58.3%) from nearby community pharmacies, followed by 31.3% of patients who took self-medication based on the suggestion from the relatives or friends. A small percentage of population received medication from their own experience (6.3%) as well as from previous physician's prescription.

Distribution based on Source of Self-medication, To the region where the study was carried out, the main source of collecting the medication includes community pharmacies, primary health centers, leftover medication etc. According to this study. 70.8% patients obtained drugs for self-medication from community pharmacies followed by 25% from the previous leftover prescriptions.

Next parameter contains association of self-medication and other parameters, Association

between Employment and Self-medication. The corresponding p-values of test statistic is p=0.1379. Use a 0.05. Since p value is less than α we can reject the Null Hypothesis, and conclude that there is an association between self-medication and employment. Association between Gender and Self-medication. The corresponding p-values of test statistic is p=0.119. Use a 0.05. Since p value is less than α , we can reject the Null Hypothesis, and conclude that there is an association between self-medication and gender. Association between Affected part and Self-medication, Association between affected parts and self-medication. Since p value is greater than 0.05, null hypothesis will be accepted which states that there is no association between the affected part and self-medication. Association of self-medication with symptoms. Since p value is greater than 0.05, there is no significant association with symptoms and self-medication.

V. DISCUSSION

This study was conducted in a tertiary care hospital, Malabar region of South India for a period of six months. Dermatophytosis is one of the most prevalent communicable diseases, in India, due to many host factors (casual health seeking behavior, lack of adherence etc.) As well as social factors (hesitation to seek medical advice due to involvement of private parts).

The population studied includes a total of 107 patients which is comparable with the study conducted by Rajeshwari Dabas et al with a population of 100 patients involving 75 females and 25 males. In this study, out of 107 patients enrolled 36.4% were males and 63.6% were females which indicates greater prevalence of dermatophyte infection in females similar to a study conducted by Mahar. S et al. but in a study conducted by Siddhartha. A. Kamekar et al and Vegada B. N et al, they highlighted the male preponderance. The reason for increased dermatophytosis incidence in females may be due to the tight-fitting clothes increasingly preferred by youngsters which are inappropriate to our hot and humid climate. Due to friction and maceration resulting from the moisture of perspiration, a large number of women present with a sub mammary location of infection.

The study shows that the dermatophyte infection is most commonly seen in adult age group (23-38). A similar result of adult age group was found in the study conducted by Vijayakumar Ramaraj et al. This can be due to the increased

level of physical activity in this particular age group that result in sweating which in turn favours the growth of dermatophyte infection. Kumar. K et al and Verenkar M. P et al conducted a similar study that can be correlated with the above findings 2728 Socialization with different people is also high when compared to other age group.

Among the total population, only 55.1 % (59) patients consulted dermatologist on developing a skin rash whereas the rest opted self-medication which reflect the casual health-seeking behavior of the patients. This can be compared to the studies conducted by Kin W. T, Kim T. W et al and Ansar A, Farshchian. M et al wherein dermatophytosis were approached by 14%-40% of patients.³⁴⁻³⁵

Self-medication is a common practice in low and middle income regions where health services are inadequate and poverty is common. (Vander Geest & Hardon, 1990). The major source of advice of self-medication (25%) were community pharmacies 34(70.8 %) followed by the leftover prescription This is in contrary to the study conducted by Dabas et al where major source of advice for the use of self-medication were pharmacists (30.8%) and friends/ relatives (29.4%). Pharmacists da major role in being a major source of prescription (20%-78%) in the earlier studies as played a well conducted by Dutta. B, Rasul E. S et al and Mahar. S, Mahajan. K et al. Hence it is crucial to educate and provide awareness to the pharmacist and general practitioners regarding the adverse effects of irrational and unethical practice of self-medication.

The study shows that among total population, there were 33 (30.8%) who were employed and 74 (69.2%) were housewives students. It is significant to note that the students and housewives mostly females) preferred self-medication mostly when compared to the employed group. Out of the unemployed group, approximately 30% of the patients chose self-medication because of their convenience or ease to obtain the medication.

According to this study the most common clinical form of dermatophyte infection is tinea cruris (43%) and seen in patients followed by tinea pedis (19%). Kak et al also reported a similar observation in his study as tinea cruris (38.2%) as the most common clinical pattern. Similarly in another study conducted by Kevyan Pakshir et al also reported same result of the most common clinical feature of ringworm, was tinea cruris. This may be due to the exercises, crowded places, and

low degree of personal hygiene or long time driving causing a major risk factor for the development of this disease problem. In contrary to this study, Singh. D, Patel DC et al Mahmoud A Land Brajac. I et al conducted and reported that the prominent and frequently affected anatomic site of dermatophyte infection is tinea corporis in Libya and Yemen, tinea pedis in Croatia, tinea capitis in United States.

There seem to be a sea change in the medication pattern of dermatologists in private practices as in academic department. The accepted guideline of western author's book don't hold true more. Because of the reason that we are using higher dose of oral antifungal for a longer time well as and these benefited the patient more rather than sticking on to the standard treatment regimen.

Longer time and these benefited the patient more rather than sticking on to the standard treatment quires. It is also to be noted that typical antifungal examines need to be applied for a longer duration. Stopping this therapy is often associated with a reappearance of pre-existing lesions. Hag Bet al. Scheke SM et al and Manjunadh Shenoy M et al suggested from their study that weight Jased dosing of terbinafine 250 mg for 15 days and Itraconazole 100mg for 15 days or 200mg for 7days is found to be more beneficial Jerajani Hr. et al and Moodahady B angera LS et al reported their study that newer topical antifungal such as Eberconazole and Sertaconazole are found to be more efficacious compare to the older azoles like Clotrimazole probably because they exert a better anti-inflammatory effects.

In this study, among the 48 patient who took self-medication 24 patients (50%) have taken antifungal preparation, followed by combination of antifungal and steroid preparation taken by 14 (29%) and corticosteroid preparation by patients (16.7%). There are other miscellaneous agent uken by the patients for self-medications which contribute up to 4.2% of the total patient who have self-medications. Most frequently prescribed antifungal agent was clotrimazole. This can emerges the issue of azole resistance strain of fungi which becomes a challenge in managing these fungal diseases. A study conducted by Badar et al 2013, Mushi et al, 2016 reported similar results of repetitive and prevalent use of antifungal agent for self-medications. It is significant to note that Wood and Brass, 2001 shows that most of the patients with prior history of antifungal use tent to be obtained the subsequent doses.³⁰ According to this study excluded by Ferris et al (1996), only about

1/3 of patients with previous diagnosis of fungal infections would accurately diagnose a recurrent fungal infection, therefore, in about 2/3 the subsequent treatment is inappropriate.

Verma SB et al conducted a study and reported topical steroids alone or in combination with other molecules have been sold over the countries due to indefinite laws open to different interpretations.

A study conducted by Coondoo A shows that the patients are not aware of the hazardous adverse actions (atrophy, hypopig, entation, telepgiectasia, hypertrichosis and acne form erutious) of seroid preparations which significantly rise sometimes be inversible."

In this study about 26 out of 48 who took self-medications 12 patient choose salt water but they don't agree that they have any improvement. Pinkela A et al reported that regular use of soap was even recommended as low cost and effective treatment option for dermatophytosis. Dermatophytosis is a growing threat tom the people in the society. The several of changes in chemical pattern correlated with the duration of abuse of topical steroids. Dogra S et al suggest that a tertiary care academic dept. in North India have a prevalence of about 5%-10% of all new case of chronic dermatophytosis with varied clinical presentations." The change or variation in the incidence of dermatophytosis may be due to environmental factors such as humid weather and hot temperature of the geographical locations.

VI. CONCLUSION

Generally dermatophytosis have been reported worldwide as the most common cutaneous aron among humans in clinical practice. This occur because of fungal agents invading to the kin so rational medication selection is very important for proper management. Otherwise grading and treatment resistant of disease may arise. But sadly this prevalence of self- dication practice for dermatophytosis is high comparatively to other dermatologic conditions scept acne. This study concluded that, among the selected patients most of them choose tifungal drugs without having any prescription. It implies the casual health seeking behavior of de patient population. The common symptom was itching and mostly affected to the groin area. More affected to the adolescent age group out of the selected patient less number of patient changes their dosage regimen even the condition is not improved. Surprisingly only few self-medicated patients are read the package insert

and are aware of abuse of combination topical steroids and antifungals. FDC creams are available as over the counter grossly abused by applying will for weeks, months and sometimes years. Mostly these are suggested by community pharmacist, friends & family members, or also left over medicine of the patient for any other condition. Even after few days no outcome or the medication is ran out, stop taking medication and go to the hospital for consultation of Dermatologist. The patient doesn't have any idea about. The self-medication abuse and complication of condition. This is the most dreadful situation may lead to chronic or treatment resistant dermatophytosis. Therefore the public has to be educated and pharmacist needs to be aware about the drawbacks of improper drug use, (anti-fungal, steroids, combination of antifungal and steroid) or irrational drug abuse. And prevention of ringworm is difficult as it is a common fungus and highly Contagious. So each population ensure their hygiene and give counselling to the population about preventing of spreading method. This may help to reduce newer cases to an extent.

FUTURE SUGGESTION:

Enhanced collaboration of patients with healthcare professionals like clinical pharmacist and taking certain educational interventions such as counselling can prevent or reduce the prevalence of self-medication in dermatophytosis throughout the community.

LIMITATION: The limitation of the study was that patients don't know the medications used and some consulted dermatologist initially had taken self-medication but was unwilling to reveal when asked.

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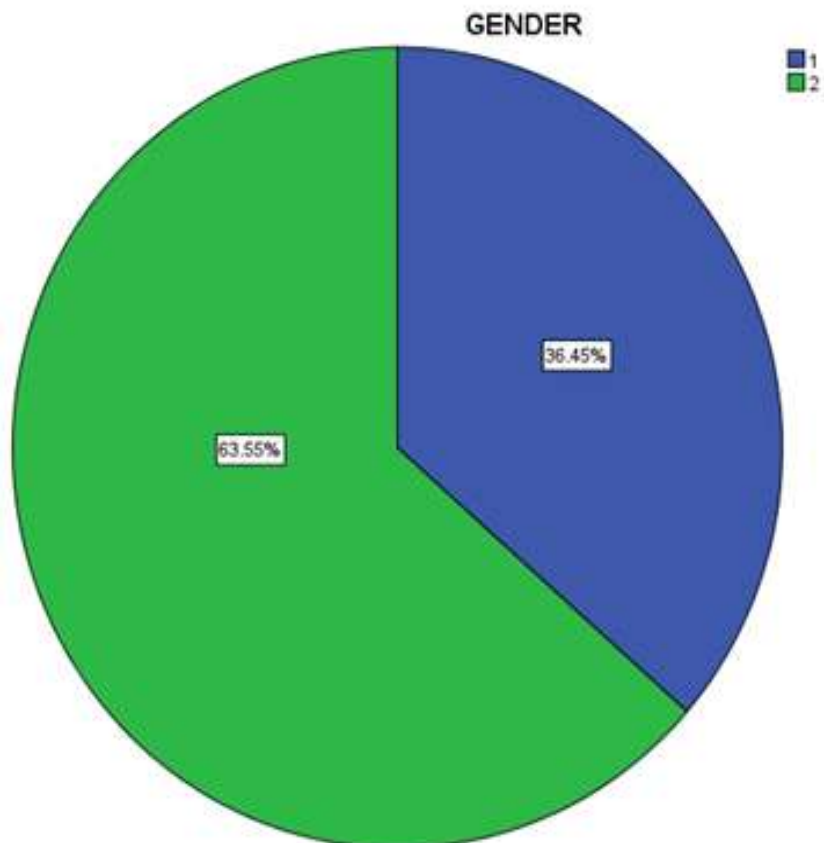
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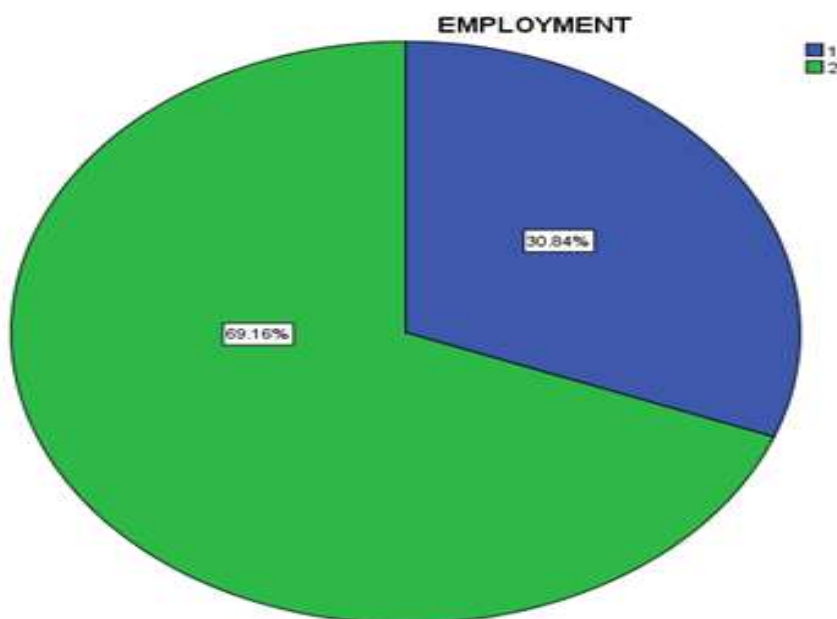
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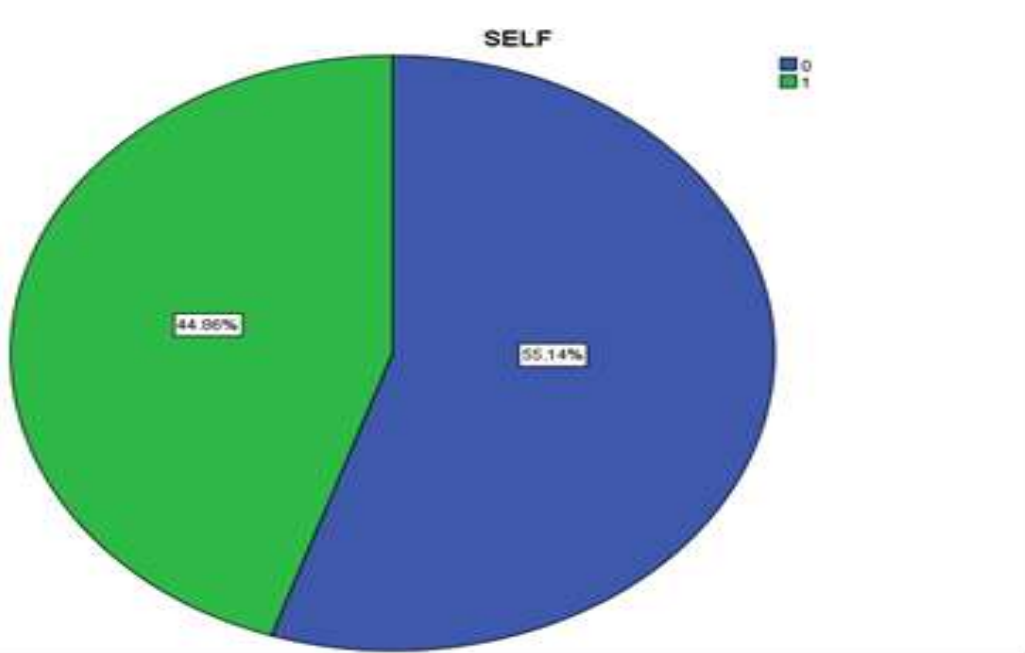
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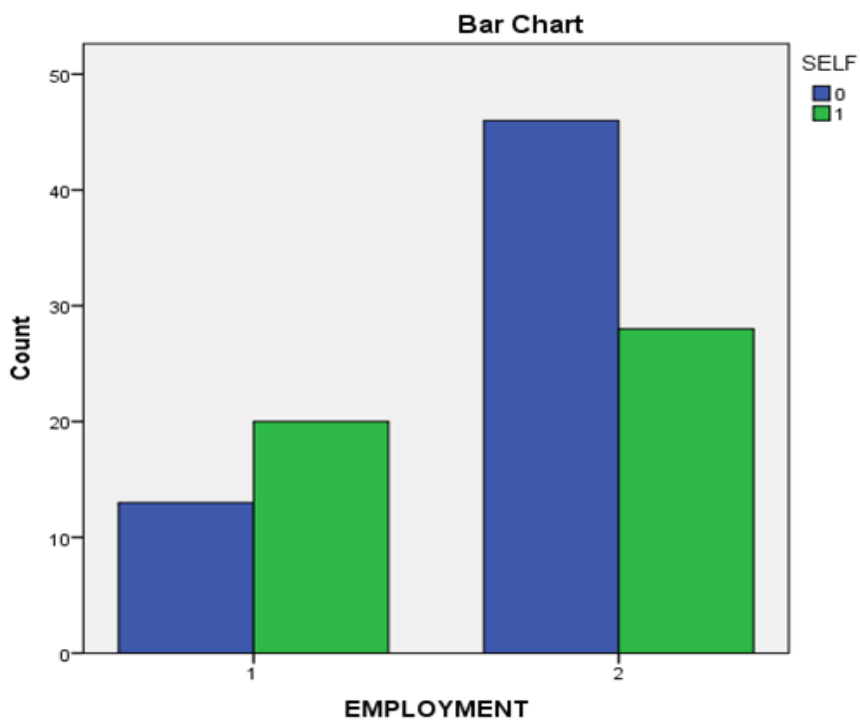
Graph 1: gender wise distribution



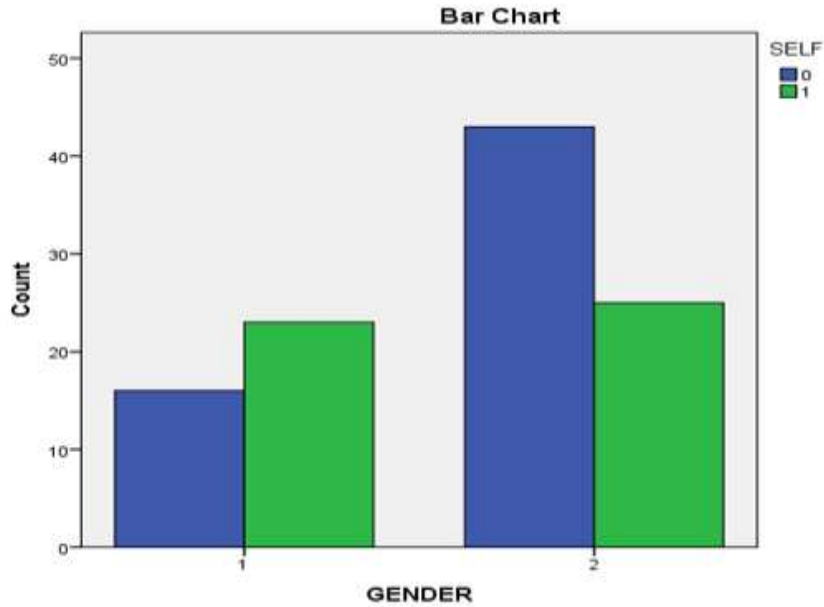
Graph 2: employment wise distribution



Graph 3: Medication based distribution

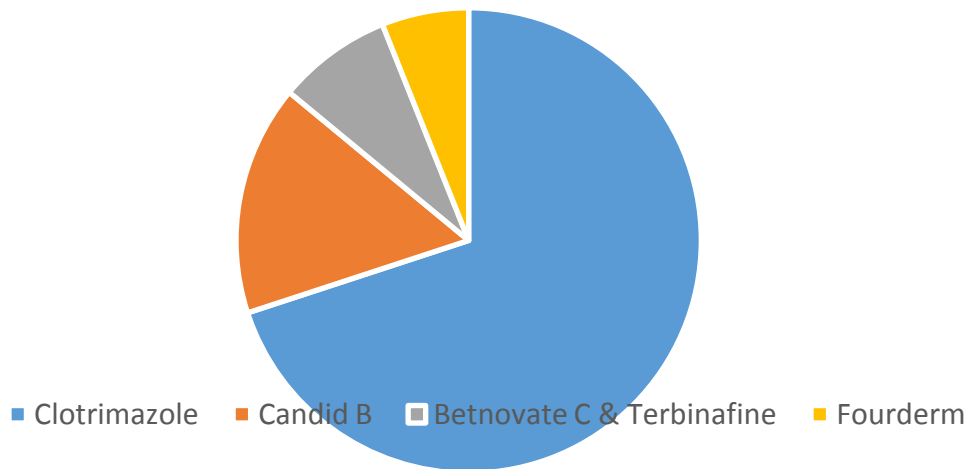


Graph 4: Employment v/s medication



Graph 5:gender v/s self medication

Mostly Used Drugs for Self Medication



Graph 6:Drug used in self medication