Prevalence and Risk Factors for Skin Diseases among Philippine National Police Officers in Camp Crame, Quezon City

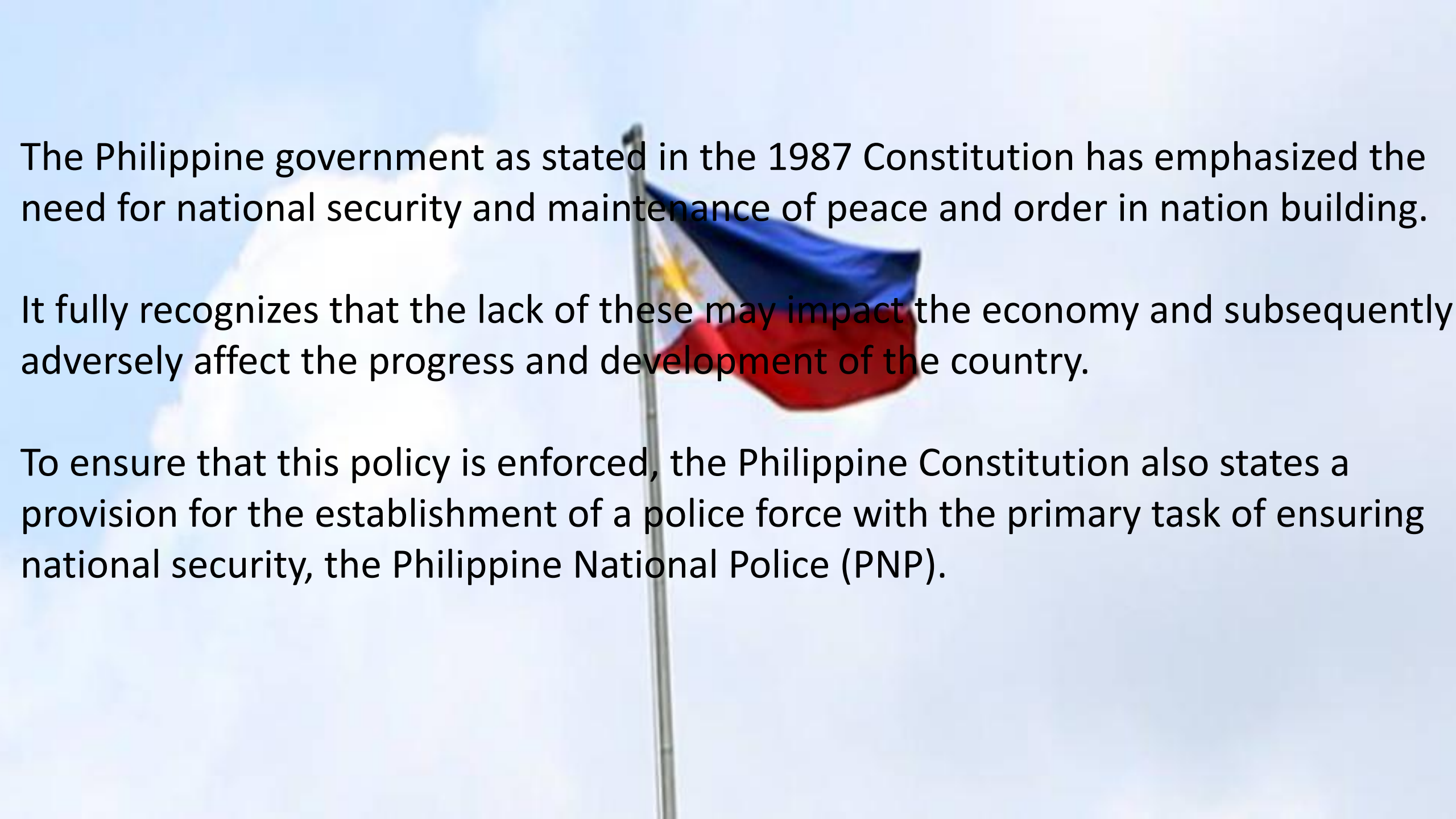


Introduction



- "The maintenance of peace and order, the protection of life, liberty and property, and promotion of the general welfare are essential for the enjoyment by all people of the blessings of democracy"

(Art. II, Sec 5, Philippine Constitution, 1987).[The 1987 Constitution of the Republic of the Philippines, Article II, Section 5)



The Philippine government as stated in the 1987 Constitution has emphasized the need for national security and maintenance of peace and order in nation building.

It fully recognizes that the lack of these may impact the economy and subsequently adversely affect the progress and development of the country.

To ensure that this policy is enforced, the Philippine Constitution also states a provision for the establishment of a police force with the primary task of ensuring national security, the Philippine National Police (PNP).

- PNP is at the forefront in keeping and maintaining internal peace and order in the country.
- As the premier law enforcing body, its mission is to prevent and control crime, ensure public safety and internal security.




To date, PNP has 150,000 police officers nationwide. With an estimated total population of 100 million Filipinos (2015 Census) the ratio is about one policeman to every 669 Filipino.

Significance of the study



- Given this tremendous responsibility of the police force, ensuring their optimum health should be a priority.
- Skin disease is an important health concern which is not given adequate attention but may actually impact work performance of the PNP and in a larger scale, affect national security.



- To date, no published study has been tracked to investigate skin diseases in the PNP.
- This research is the first step in addressing the common skin diseases among PNP.
- It aims to determine the prevalence and risk factors of common skin diseases among PNP officers.
- Better understanding of this is necessary to develop interventions for prevention and providing focused dermatologic health care services to the PNP.

Objectives of the study

A. General Objective:

To determine the prevalence and risk factors for skin disease among police officers in Camp Crame, Quezon City.

Objectives of the study

B. Specific Objectives

1. To determine the overall prevalence of skin diseases among the police officers in Camp Crame, Quezon City.

Objectives of the study

2. To determine the prevalence of specific types of skin disease among the police officers in Camp Crame, Quezon City as subdivided into the following skin disease

2.1. Non-communicable Skin Diseases

- 2.1.1.Dermatitis and Eczemas
- 2.1.2.Infestation, Bites and Stings
- 2.1.3.Bacterial Infections
- 2.1.4.Papulosquamous Disease
- 2.1.5.Pigmentary Disorder
- 2.1.6.Disorder of the skin appendage
- 2.1.7.Urticaria

Objectives of the study

2.2.Communicable Skin Diseases

- 2.2.1Infestation, Bites and Stings
- 2.2.2.Dermatophyte Infections
- 2.2.3.Viral Infections
- 2.2.4.Bacterial Infections

Objectives of the study

3.To determine whether the following factors are associated with having skin disease among the police officers in Camp Crame, Quezon City.

- 3.1 Age
- 3.2 Gender
- 3.3 Position / rank in the PNP
- 3.4 Years of service in the PNP
- 3.5 Smoking status
- 3.6 Hygienic practices
- 3.7 Place of residence: home or barracks
- 3.8 Place of work: office or field

Materials and Methods

Materials and Methods

- **Study Design:**
  - Cross-sectional analytic study design
- **Study Area:**
  - Camp Rafael C. Crame, the national headquarters of the Philippine National Police (PNP).
- **Study Population:**
  - All active PNP police officers, both commissioned and non-commissioned, stationed at the national headquarters in Camp Crame, Quezon City.

Study Population

Inclusion Criteria	Exclusion Criteria
a. Police officers commissioned or non-commissioned. b. Police officers assigned to administrative or operational units c. Male or Female d. 21 to 55 years old e. With voluntary consent to participate in the study.	a. Civilian employees which are non-police officers of the PNP National Headquarters. b. Those who are not willing to participate in the study.

Sample Size Estimation

- **Random sample of 384 police officers** as subjects were generated from the online site “randomizer.org”.
- The names of the police officers corresponding to the random numbers generated were then invited to be part of the study.
- To give allowance for the possibility of refusals or unavailability at the time of data gathering, a 20% margin of error was computed which resulted to an additional 76 randomly selected participants.

Study Procedure



Secure permission to conduct study from the Director of Health Service, PNP

Secure permission to conduct study from the PNPGH Chief; upon approval, give PNPGH Chief the generated random numbers corresponding to the needed participants per unit (PNPGH Chief is blinded to the skin disease status of the randomly selected participants)

Invite randomly selected participants to join the study; secure participant's informed consent; schedule the survey and skin exam

Administer survey and conduct skin exam; inform participant of the result

Treat those with skin disease; give initial meds and advise to follow up

Figure 1. Study Procedure

Data Analysis

- Frequency and percent
- Mean + standard deviation
- Median + interquartile range
- Chi square test
- Fisher's exact test
- Mann Whitney test
- **All statistical computations were performed using Stata IC version 13. P-values less than 0.05 were considered significant.**

Results

Table 1. Characteristics of the Study Participants

Most of the study participants **(44.7%) belonged to the 36 to 45 age** bracket and about **60% are males.**

The **mean age**, which is approximately the same as the **median age** (roughly **39 years**), is also within the **36 to 45 age group**.

In terms of position, about **¾ of the participants (74.7%) are non-commissioned officers.**

Half of the participants have been in service for **13 years or less**.

About **72% have never smoked**. Among those who have tried smoking, only ¼ are still current smokers with pack years ranging from 1 to 31.

Age (in years)	Mean ± SD	39.4 ± 7.5
	Median ± IQR	39 ± 11
	Range	[22, 55]
	22 to 35 (%)	32.8
	36 to 45 (%)	44.7
	46 to 55 (%)	22.5
Sex	Male (%)	59.9
	Female (%)	40.1
Position	Commissioned Officer (%)	25.3
	Non-Commissioned Officer (%)	74.7
Years in PNP	Mean ± SD	14.2 ± 8.5
	Median ± IQR	13 ± 11
	Range	[0.67, 44]
	10 & below (%)	39.8
	11 to 20 (%)	44.9
	21 to 30 (%)	8.6
	More than 30	6.7
Smoking History	Ever Smoked (%)	28.1
	Never Smoked (%)	71.9
Current Smoking Status(among those who ever smoked)	Current Smokers (%)	24.0
	Former Smokers (%)	76.0
Pack Years	Mean ± SD	10.0 ± 8.5
	Median ± IQR	7 ± 14
	Range	[1, 31]
	1 to 10 (%)	63.0%
	11 to 20 (%)	26.4%
	21 to 31 (%)	10.6%

Prevalence of skin diseases among PNP officers

Figure 2. Overall Prevalence of Skin Disease among PNP officers

Out of the 384 police officers included in this study, **307 were found to have at least one skin disease** resulting to an overall skin disease **prevalence of 80%.**

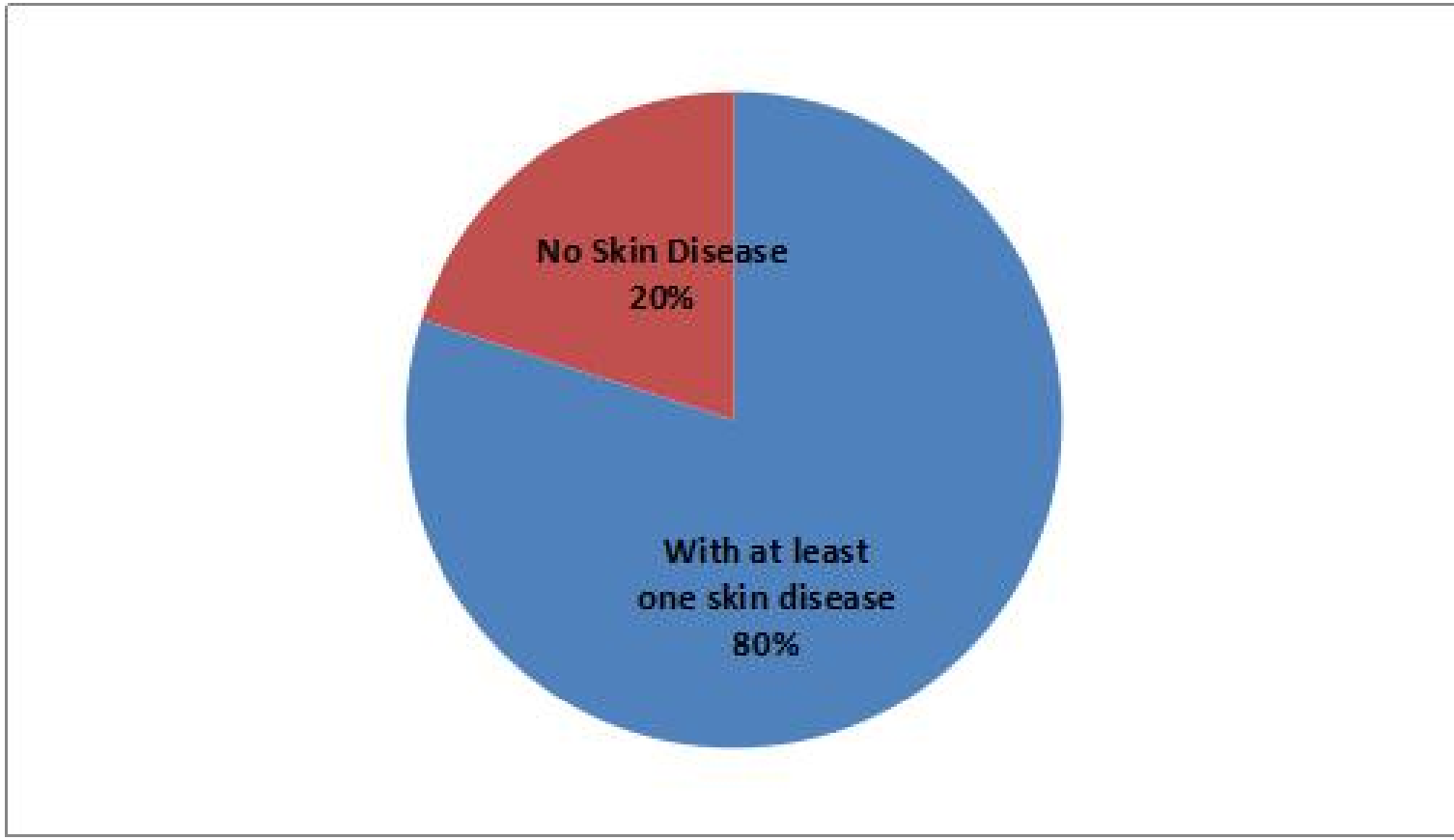


Figure 3. Prevalence of Communicable and Non-Communicable Skin Disease

Among the 307 subjects with positive skin disease, **223** participants **(58%) had only non-communicable skin** disease findings, **52** participants **(14%) had only communicable skin disease** findings and **32 participants (10%) had both non-communicable and communicable skin disease** findings.

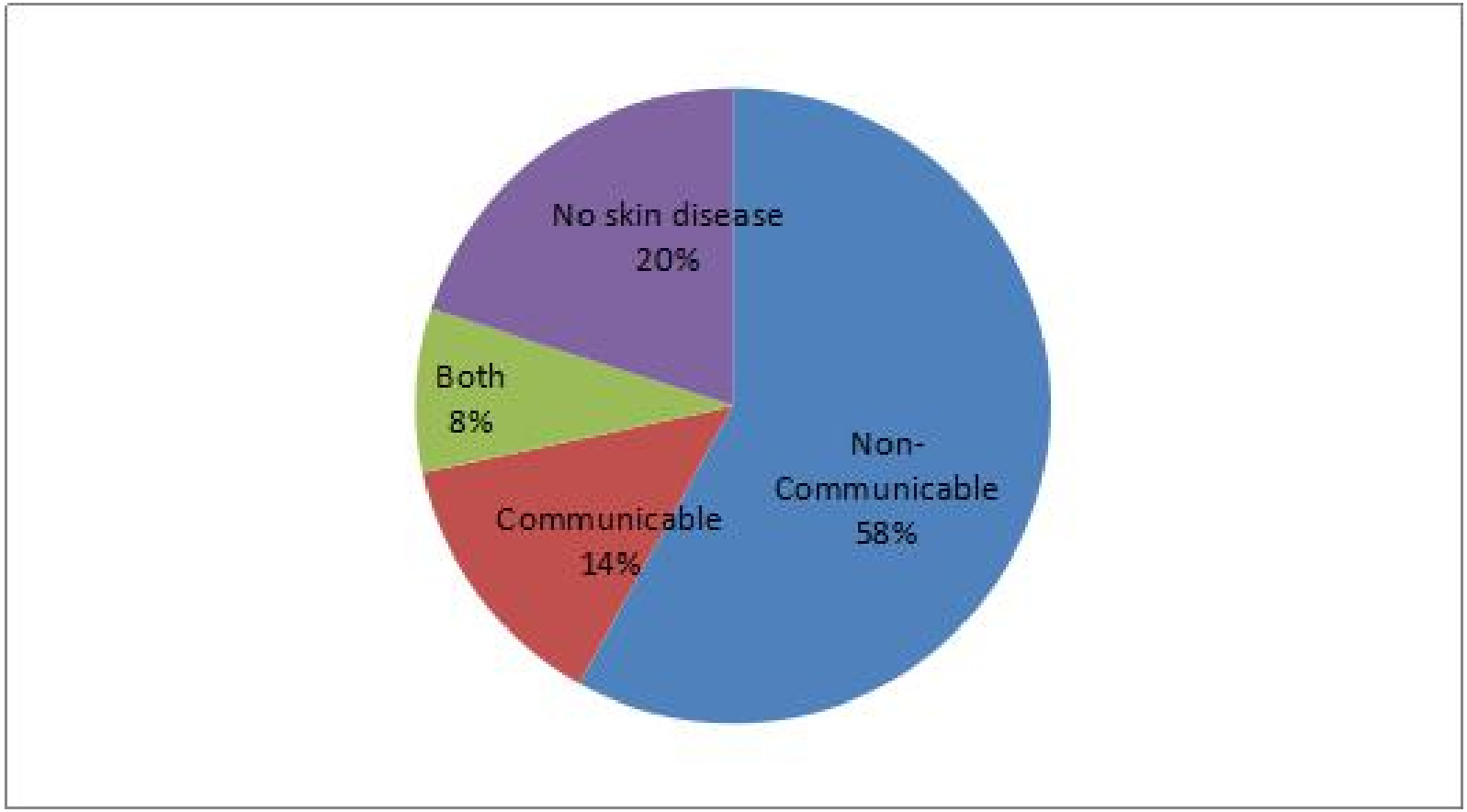


Figure 4. Prevalence of Major Categories of Non-Communicable Skin Diseases

Dermatitis and eczemas ranked first which was present in **114 participants** resulting in a **prevalence of 29.7%**. This was followed by **pigmentary disorders** having been found in **73 participants** and a **prevalence of 19.01%**. Disorders of skin appendages was found in **66 participants** and a **prevalence of 17.2%.**

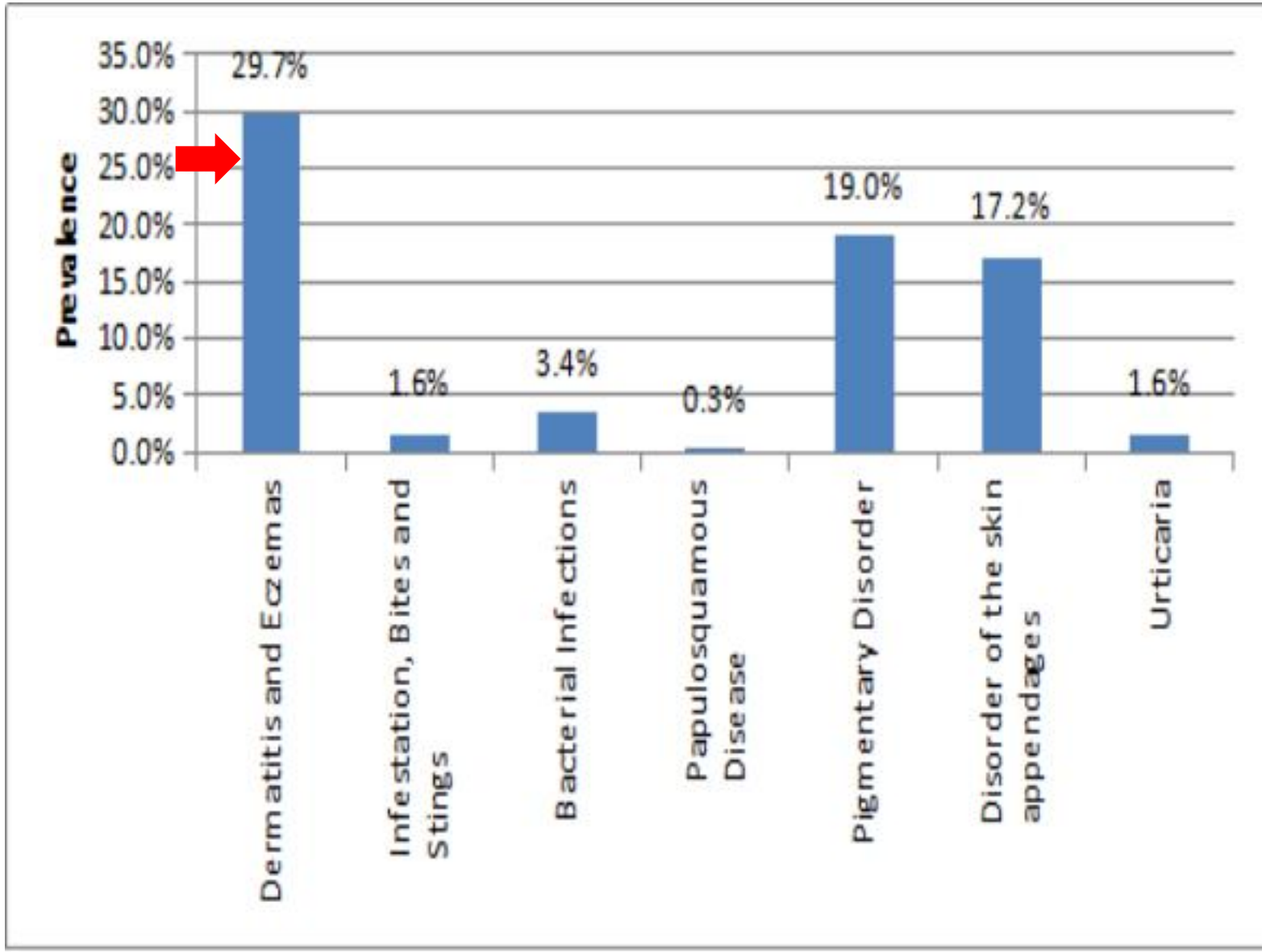


Figure 5. Prevalence of non-communicable skin diseases subset dermatitis and eczema

The most common was **seborrheic dermatitis with a prevalence of 8.1%** involving **31** participants followed by **atopic dermatitis and dyshidrotic eczema**, each having a **prevalence of 6.8%** which presented in **26** participants.

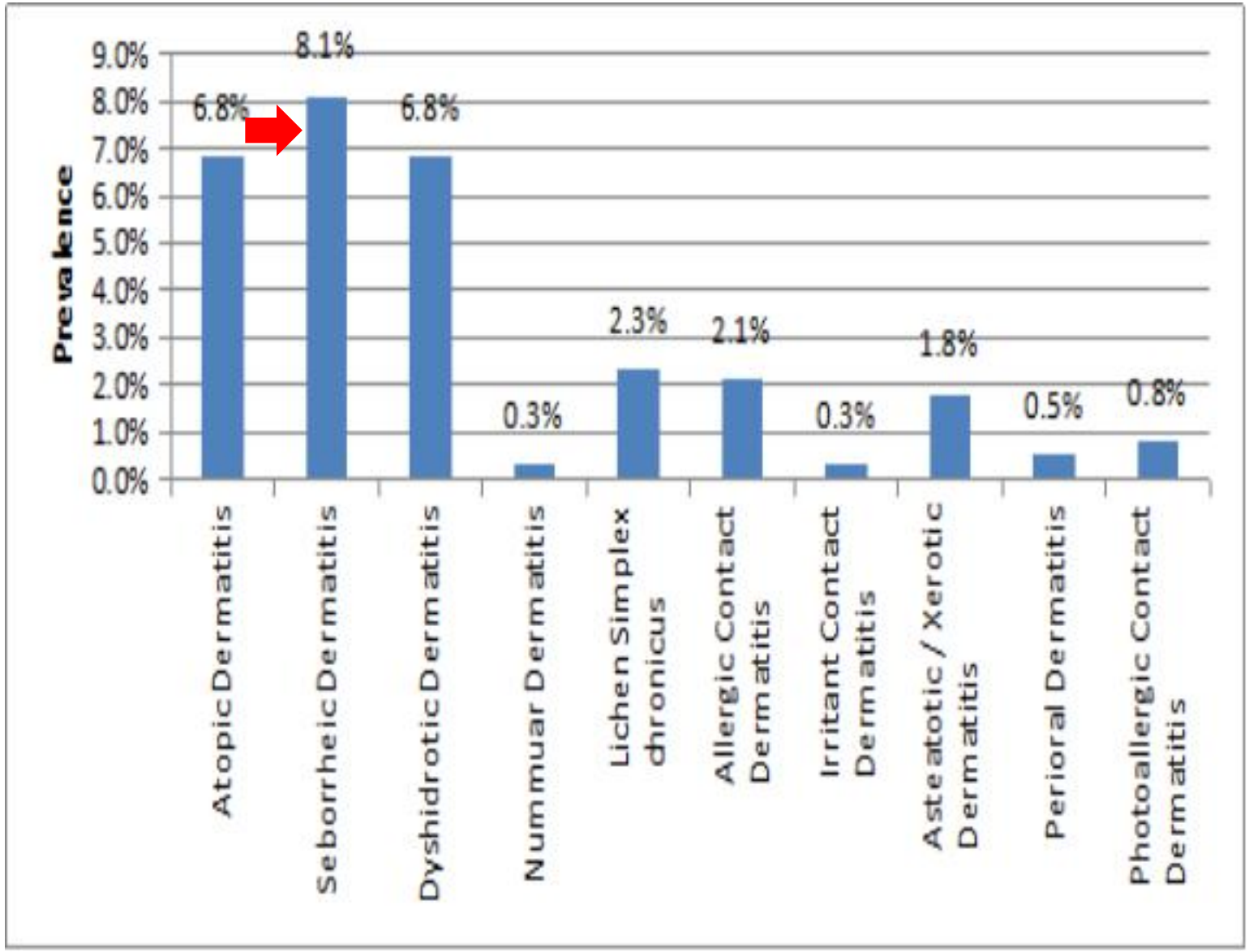


Figure 6. Prevalence of non-communicable skin diseases subset pigmentary disorders

In this subset, **melasma was seen in 67 participants (17.4%)**. This was followed by post-inflammatory hyperpigmentation seen in 6 participants with the prevalence of 1.6%.

No participants had vitiligo or post-inflammatory hypopigmentations.

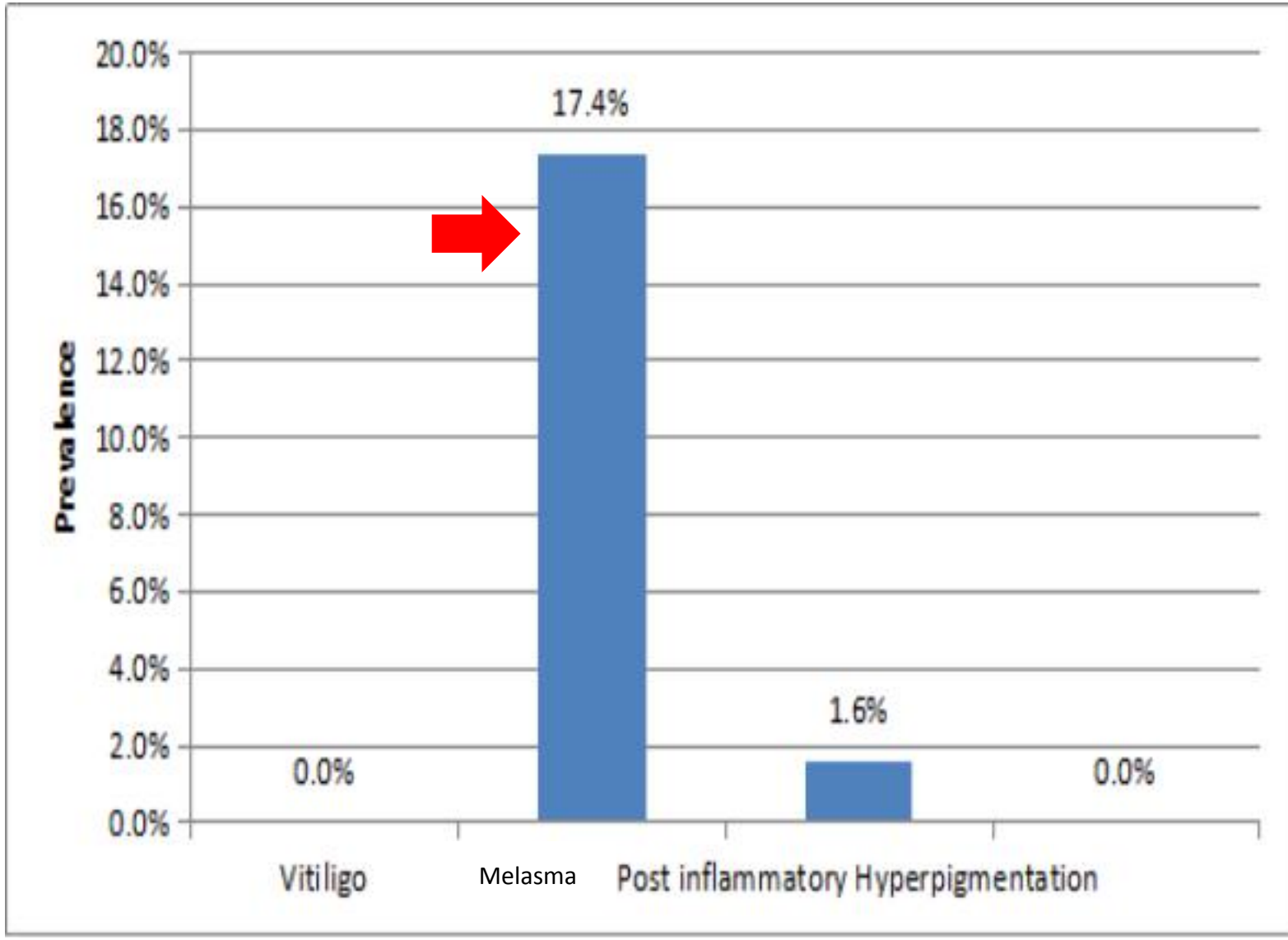


Figure 7. Prevalence of non-communicable skin diseases subset disorder of skin appendages

Among this subset, **disorders of the pilosebaceous unit was seen in 60 participants (15.6%)** while hair disorders were seen in 6 participants (1.6%).

Among those with disorders of the pilosebaceous unit, **acne was seen in 56 participants (14.6%)** while bromhidrosis was seen in 3 participants (0.8%) and rosacea in 1 participant (0.3%).

Among those with disorders of the hair, those with androgenetic alopecia was seen in 5 participants (1.3%) while those with alopecia areata was seen in 1 participant

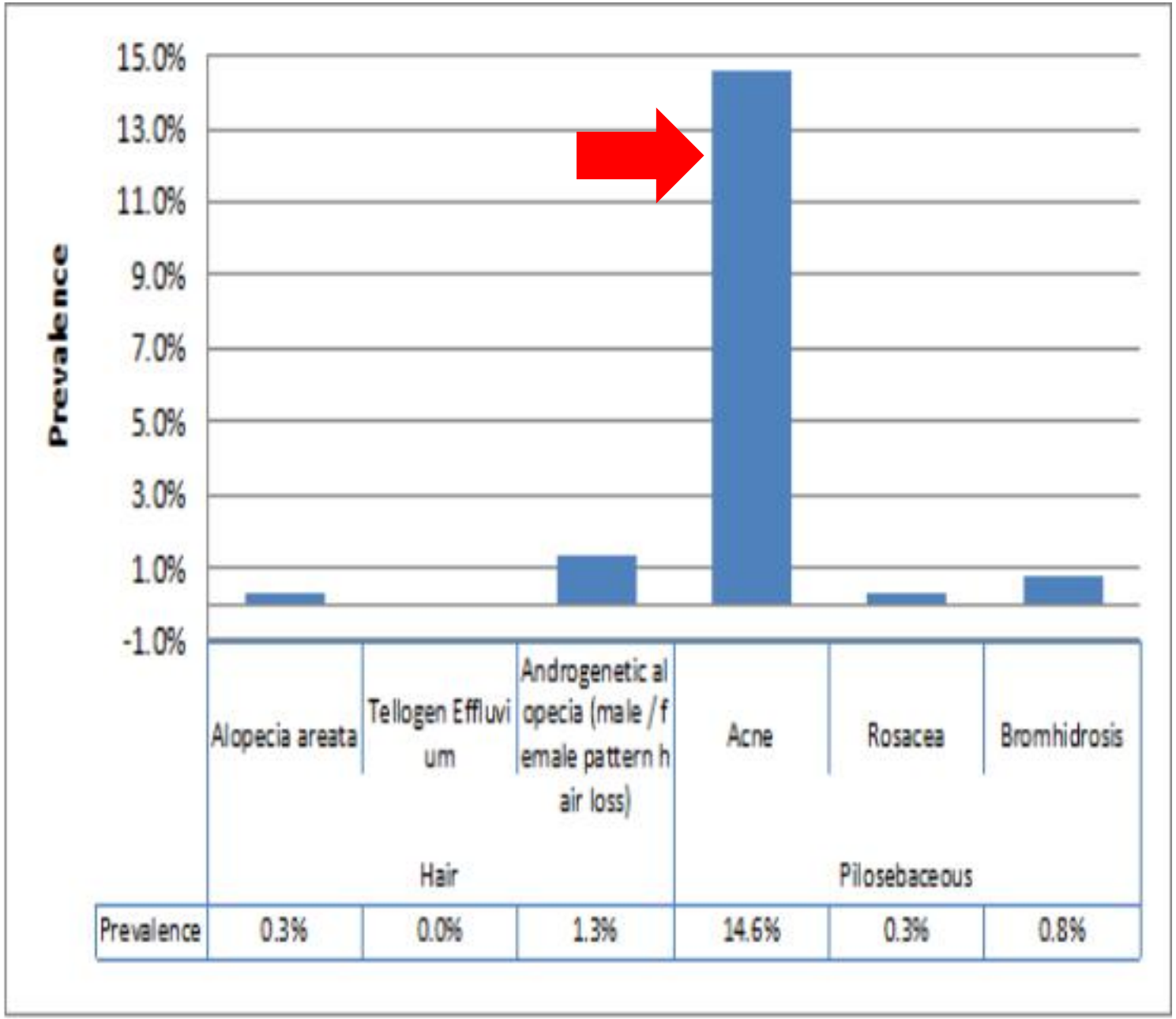


Figure 9. Prevalence of Major Categories of Communicable Skin Diseases

Under this category of skin diseases, **viral infections was present in 37 participants** resulting in a **prevalence of 9.6%.**

This was followed by **dermatophyte infections** having been present in **25 participants** and a **prevalence of 6.5%**.

Disorders of infestation, bites and stings was found in **1 participant** and a **prevalence of 0.3%.**

Communicable bacterial infections were not seen in any of the participants.

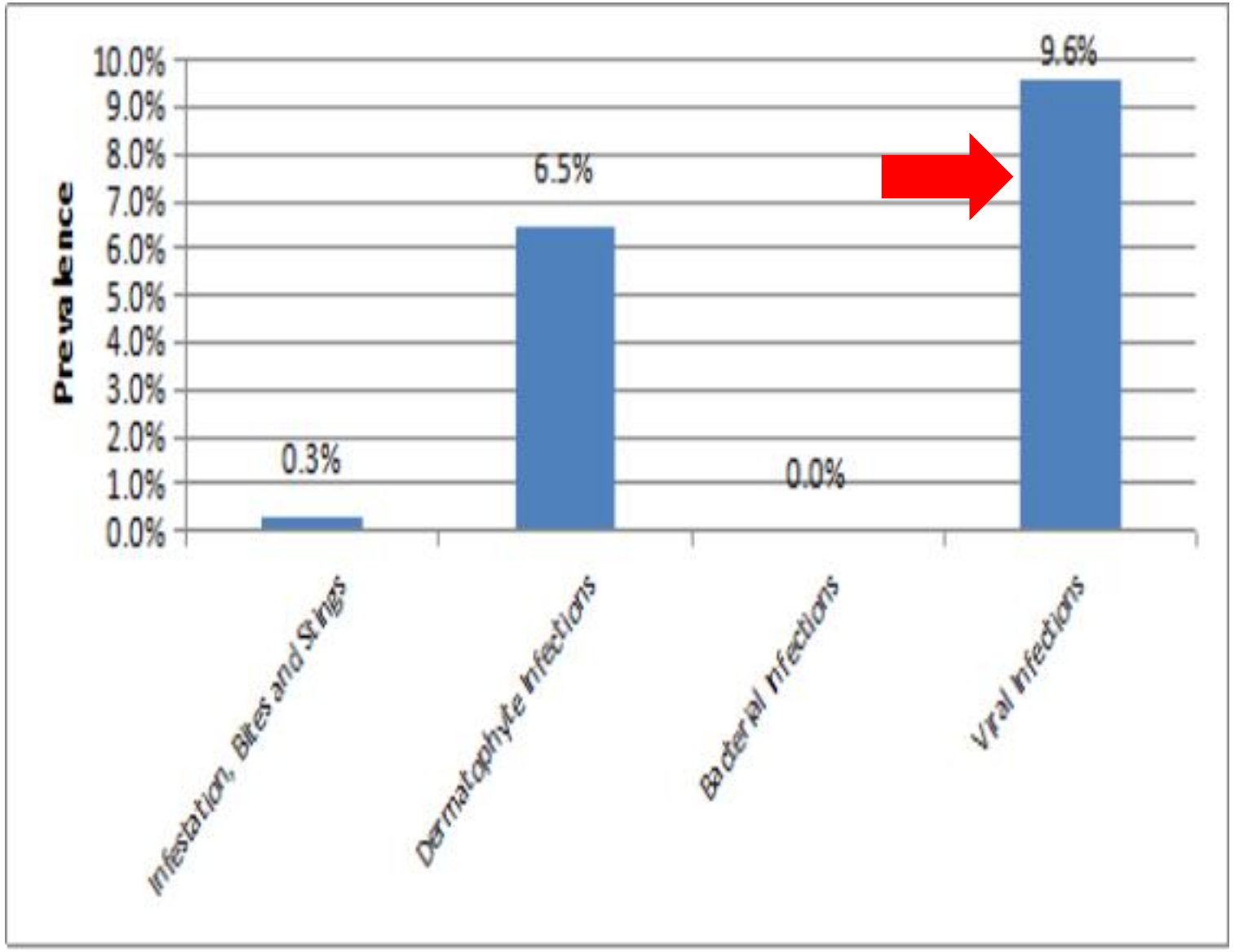


Figure 10. Prevalence of communicable skin diseases subset viral infections

The **most common was verruca plana** which was present in **34 participants** with a **prevalence of 8.9%**. This was followed by verruca vulgaris which was present in 3 participants with a prevalence of 0.8%.

None of the participants had viral infection of varicella or herpes zoster. [Figure 10]

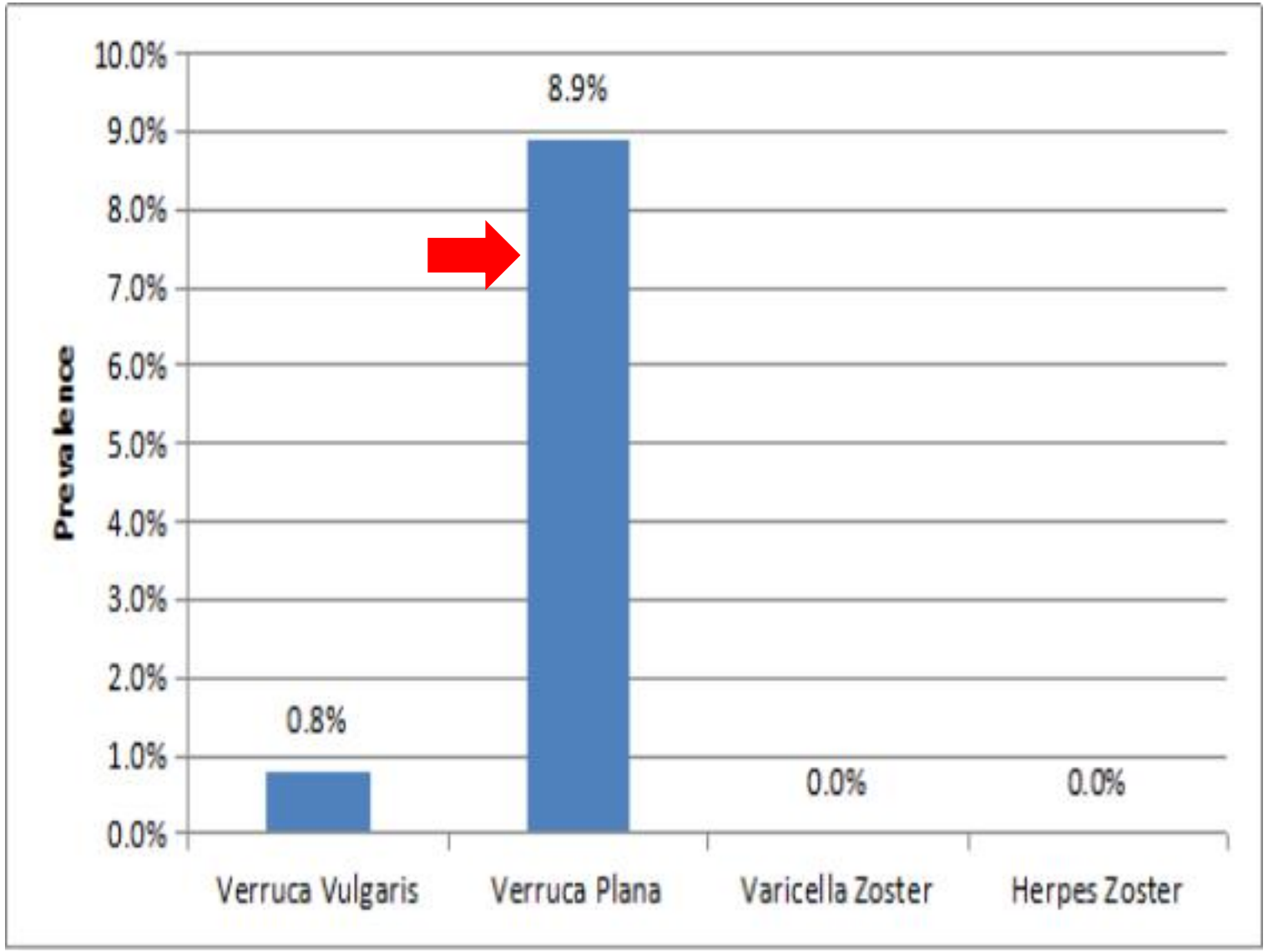
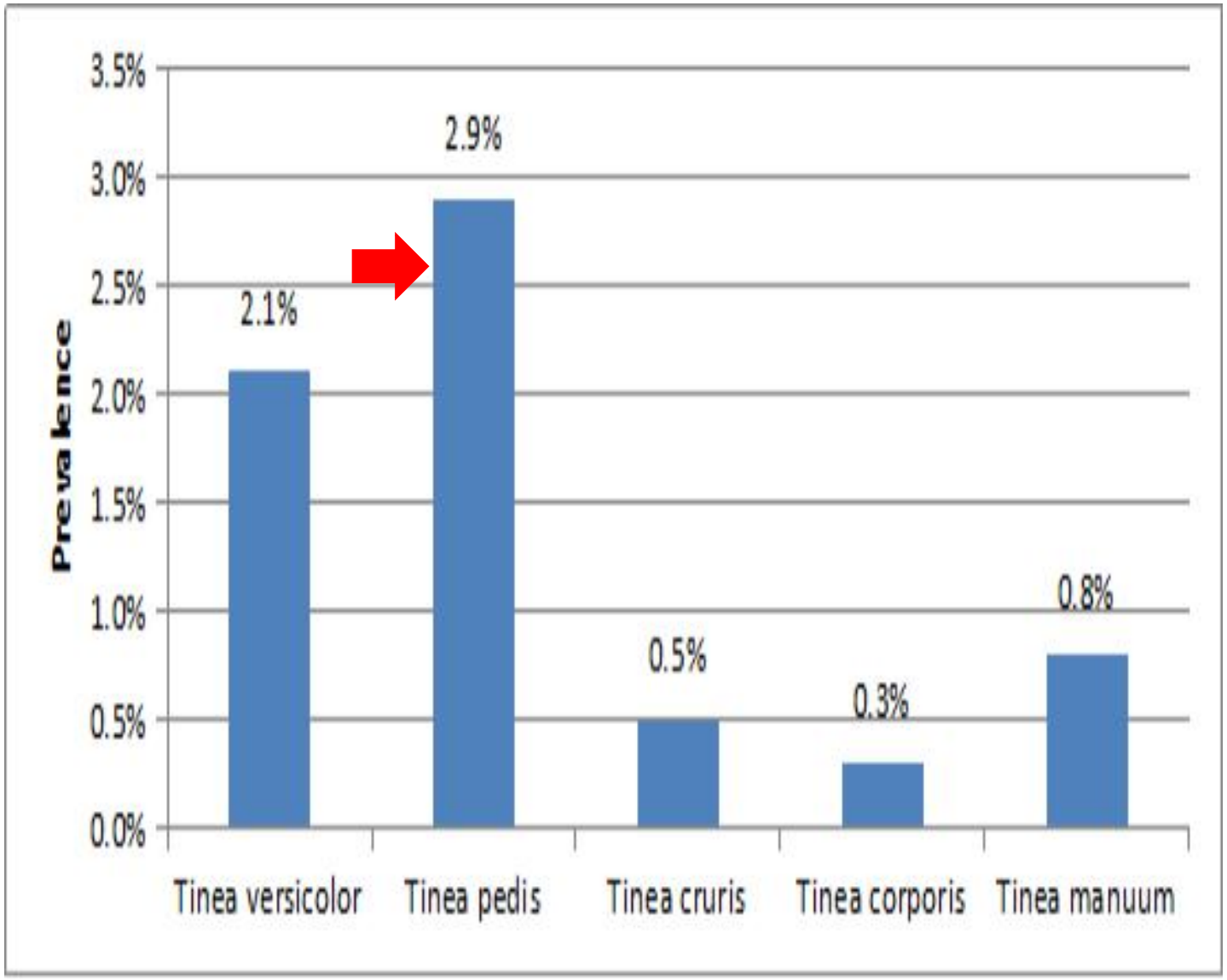


Figure 11. Prevalence of communicable skin diseases subset dermatophyte infections

Among this subset, **tinea pedis was seen in 11 participants (2.9%)** followed by tinea versicolor which was present in 8 (2.1%).

Other dermatophyte infection such as tinea manuum, tinea cruris and tinea corporis were present in a few of the participants as seen on Figure 11.



Risk factors among PNP officers with skin diseases

Table 2. Comparison of the Mean Age of the Police Officers With and Without Various Skin Diseases

Uniformed PNP officers with **dermatitis and eczemas and pigmentary disorders** had significantly **higher mean age** as compared to those without the said diseases while those with **disorders of the skin appendage and urticaria** were found to be significantly **younger**.

Significant at α = 5% ;

t – independent samples t test

	Mean Age of those WITH the Disease	Mean Age of those WITHOUT the Disease	p-value[t]
Non-communicable	39.1	40.0	0.295
Dermatitis and Eczemas	41.4	38.6	0.002*
Infestations, Bites, Stings	36.0	39.4	0.309
Bacterial	37.6	39.5	0.395
Papulosquamous Disease	35.0	39.4	0.407
Pigmentary Disorder	41.2	39.0	0.044*
Disorder of the skin appendage	34.5	40.5	0.000*
Urticaria	35.2	39.6	0.037*
Communicable	40.7	39.0	0.089
Infestations, Bites, Stings	37.2	39.4	0.464
Dermatophyte Infections	40.5	39.3	0.411
Viral Infections	41.6	39.1	0.062
Skin Disease	39.2	40.3	0.276

Table 3. Prevalence of Various Types of Skin Disease among Police Officers by Gender

A significantly greater proportion of **males** were found to have **dermatitis and eczemas** while **pigmentary disorders and disorders of the skin appendage** were significantly more common among **females.**

**Significant at α = 5%;*

C – chi-square test with Fisher's correction, when applicable

	Prevalence among Male police officers (%)	Prevalence among Female police officers (%)	p-value[C]
Non-communicable	62.5	72.4	0.061
Dermatitis and Eczemas	34.5	20.9	0.007*
Infestations, Bites, Stings	2.0	0.7	0.652
Bacterial	3.5	3.7	1.000
Papulosquamous Disease	1.0	0.0	0.518
Pigmentary Disorder	10.0	31.3	0.000*
Disorder of the skin appendage	14.0	23.1	0.032*
Urticaria	3.5	4.5	0.651
Communicable	29.0	11.2	0.000*
Infestations, Bites, Stings	3.0	0.0	0.085
Dermatophyte Infections	13.0	3.7	0.004*
Viral Infections	12.5	7.5	0.141
Skin Disease	82.0	76.9	0.251

Table 4. Prevalence of Various Types of Skin Disease among Commissioned and Non-Commissioned Police Officers

A significantly higher proportion of **commissioned officers** were found to have **viral skin infections** as compared to non-commissioned personnel.

**Significant at α = 5%;*

C – chi-square test with Fisher's correction, when applicable

	Prevalence among Commissioned Officers (%)	Prevalence among Non-commissioned Officers (%)	p-value[C]
Non-communicable	61.4	68.6	0.234
Dermatitis and Eczemas	32.5	28.2	0.450
Infestations, Bites, Stings	0.0	2.0	0.335
Bacterial	2.4	4.1	0.737
Papulosquamous Disease	0.0	0.8	1.000
Pigmentary Disorder	22.9	16.7	0.210
Disorder of the skin appendage	13.3	19.2	0.221
Urticaria	1.2	4.9	0.197
Communicable	28.9	19.6	0.076
Infestations, Bites, Stings	2.4	1.6	0.645
Dermatophyte Infections	8.4	9.8	0.714
Viral Infections	19.3	7.3	0.002*
Skin Disease	73.5	82.9	0.063

Table 5. Comparison of the Median Years in Service of the Police Officers With and Without Various Skin Diseases

Uniformed PNP personnel with **dermatitis and eczemas, pigmentary disorders and (at least one) communicable skin disease** had significantly **higher median years of service in the PNP** as compared to those without the said diseases.

On the other hand, those with **disorders of the skin appendage and urticaria** were found to be **newer in service**.

**Significant at α = 5%;*

M – Mann Whitney U test

	Median Years in Service of those WITH theDisease	Median Years in Service of those WITHOUT theDisease	p-value[M]
Non-communicable	12	13	0.671
Dermatitis and Eczemas	17	11.5	0.000*
Infestations, Bites, Stings	6	13	0.105
Bacterial	10	13	0.370
Papulosquamous Disease	8.5	13	0.281
Pigmentary Disorder	15	12	0.036*
Disorder of the skin appendage	8	13	0.000*
Urticaria	9	13	0.037*
Communicable	14	12	0.007*
Infestations, Bites, Stings	13	13	0.749
Dermatophyte Infections	13	12.75	0.076
Viral Infections	16	12	0.051
Skin Disease	13	13	0.589

Table 6. Prevalence of Various Types of Skin Disease among Police Officers who Ever or Never Smoked

No significant difference in skin disease prevalence was found across groups of **past and current smoking status** (p-values > 0.05).

[Tables 6 and 7]

C – chi-square test; F- with Fisher's exact correction

	Prevalence among those who Ever Smoked	**Prevalence among those who Never Smoked**	
Non-communicable	63.1%	69.3%	0.303
Dermatitis and Eczemas	35.7%	28.8%	0.247
Infestations, Bites, Stings	3.6%	0.5%	0.069F
Bacterial	2.4%	4.2%	0.734F
Papulosquamous Disease	.0%	0.9%	1.000F
Pigmentary Disorder	11.9%	19.5%	0.118
Disorder of the skin appendage	14.3%	19.5%	0.289
Urticaria	2.4%	5.1%	0.365F
Communicable	28.6%	20.0%	0.110
Infestations, Bites, Stings	4.8%	0.9%	0.055F
Dermatophyte Infections	13.1%	8.4%	0.215
Viral Infections	11.9%	10.2%	0.674
Skin Disease	82.1%	80.9%	0.809

Table 7. Prevalence of Various Types of Skin Disease among Current or Former Smokers

No significant difference in skin disease prevalence was found across groups of **past and current smoking status** (p-values > 0.05).

[Tables 6 and 7]

C – chi-square test; F- with Fisher's exact correction

	Prevalence among Current Smokers	**Prevalence among Former Smokers**	**p-value[C]**
Non-communicable	63.8%	69.6%	0.411
Dermatitis and Eczemas	34.5%	29.9%	0.510
Infestations, Bites, Stings	3.4%	.5%	0.144[F]
Bacterial	3.4%	2.2%	0.632[F]
Papulosquamous Disease	.0%	.5%	1.000[F]
Pigmentary Disorder	12.1%	17.9%	0.294
Disorder of the skin appendage	13.8%	20.7%	0.246
Urticaria	1.7%	3.8%	0.684[F]
Communicable	22.4%	19.0%	0.572
Infestations, Bites, Stings	1.7%	2.2%	1.000[F]
Dermatophyte Infections	13.8%	7.6%	0.153
Viral Infections	8.6%	9.2%	0.886
Skin Disease	79.3%	81.0%	0.779

Table 8. Comparison of the Median Pack Years of the Police Officers With and Without Skin Diseases

Likewise, **no significant difference in median pack years** was found between those with and without skin disease (p-values > 0.05). [Table 8]

**Significant at α = 5%;*

M – Mann Whitney U test

	Median Pack Years of those WITHOUT the Disease	Median Pack Years of those WITH the Disease	p-value[M]
Non-communicable	0	**0**	0.614
Dermatitis and Eczemas	0	0	0.129
Infestations, Bites, Stings	0	18	0.106
Bacterial	0	0	0.892
Papulosquamous Disease	0	0	0.453
Pigmentary Disorder	0	0	0.44
Disorder of the skin appendage	0	0	0.497
Urticaria	0	0	0.222
Communicable	0	0	0.822
Infestations, Bites, Stings	0	0	0.706
Dermatophyte Infections	0	0	0.588
Viral Infections	0	0	0.920
Skin Disease	0	0	0.909

Table 9. Comparison of the Median Composite Hygiene Score of the Police Officers With and Without Various Skin Diseases

Police officers with **at least one non-communicable skin disease** had significantly **lower median composite hygiene score** as compared to those without the said disease (p-value < 0.05).

**Significant at α = 5%;*

M – Mann Whitney U test

	Median Composite Hygiene Score of those WITHOUT the Disease	Median Composite Hygiene Score of those WITH the Disease	p-value[M]
Non-communicable	10	11	0.016*
Dermatitis and Eczemas	10	10	0.093
Infestations, Bites, Stings	11	10	0.595
Bacterial	9.5	10	0.951
Papulosquamous Disease	11	10	0.898
Pigmentary Disorder	10	10	0.761
Disorder of the skin appendage	10	10	0.294
Urticaria	9.5	10	0.210
Communicable	10	10	0.238
Infestations, Bites, Stings	10	10	0.840
Dermatophyte Infections	10	10	0.215
Viral Infections	10	10	0.841

Table 10. Prevalence of Various Types of Skin Disease among Police Officers grouped by Frequency of Handwashing

Among the specific hygienic practices included in the questionnaire, **frequency of handwashing, changing socks and changing beddings** were **not found to be associated with the prevalence of any of the skin diseases** covered in this study (p-values > 0.05).

[Tables 10, 11 and 12]

C – chi-square test;

F- with Fisher's exact correction

	Prevalence among those who wash :			
	< 6 times	**6 to 12 times**	**> 12 times**	**p-value[C]**
Non-communicable	70.6%	65.6%	55.0%	0.179
Dermatitis and Eczemas	29.4%	29.9%	22.5%	0.642
Infestations, Bites, Stings	.7%	2.6%	.0%	0.435[F]
Bacterial	2.9%	4.5%	2.5%	0.840[F]
Papulosquamous Disease	.7%	.6%	.0%	1.000[F]
Pigmentary Disorder	19.1%	16.9%	22.5%	0.695
Disorder of the skin appendage	17.6%	19.5%	10.0%	0.373
Urticaria	6.6%	2.6%	.0%	0.084
Communicable	25.7%	16.9%	30.0%	0.085
Infestations, Bites, Stings	1.5%	2.6%	.0%	0.729[F]
Dermatophyte Infections	13.2%	5.8%	10.0%	0.098
Viral Infections	10.3%	8.4%	20.0%	0.106
Skin Disease	86.0%	76.6%	72.5%	0.061

Table 11. Prevalence of Various Types of Skin Disease among Police Officers grouped by Frequency of Changing Socks

Among the specific hygienic practices included in the questionnaire, **frequency of handwashing, changing socks and changing beddings** were **not found to be associated with the prevalence of any of the skin diseases** covered in this study (p-values > 0.05).

[Tables 10, 11 and 12]

C – chi-square test;

F- with Fisher's exact correction

	Prevalence among those who change socks:			
	< 7 times	**7 to 13 times**	**> 13 times**	**p-value[C]**
Non-communicable	69.6%	62.4%	65.0%	0.427
Dermatitis and Eczemas	30.4%	29.8%	20.0%	0.630
Infestations, Bites, Stings	1.6%	.6%	5.0%	0.160[F]
Bacterial	4.0%	2.8%	10.0%	0.241[F]
Papulosquamous Disease	.8%	.0%	5.0%	0.052[F]
Pigmentary Disorder	16.0%	17.4%	20.0%	0.888
Disorder of the skin appendage	21.6%	14.0%	25.0%	0.159
Urticaria	5.6%	2.8%	.0%	0.356[F]
Communicable	23.2%	21.9%	15.0%	0.713
Infestations, Bites, Stings	2.4%	1.7%	.0%	0.792[F]
Fungal Infections	11.2%	8.4%	.0%	0.247
Viral Infections	8.8%	11.8%	15.0%	0.587
Skin Disease	84.0%	77.0%	70.0%	0.190

Table 12. Prevalence of Various Types of Skin Disease among Police Officers grouped by Frequency of Changing Beddings

Among the specific hygienic practices included in the questionnaire, **frequency of handwashing, changing socks and changing beddings** were **not found to be associated with the prevalence of any of the skin diseases** covered in this study (p-values > 0.05).

[Tables 10, 11 and 12]

C – chi-square test;

F- with Fisher's exact correction

	Prevalence among those who change beddings:			
	Once a month	**Once every two weeks**	**Once a week**	**p-value[C]**
Non-communicable	66.7%	69.1%	64.2%	0.685
Dermatitis and Eczemas	35.4%	26.0%	29.6%	0.469
Infestations, Bites, Stings	.0%	2.4%	1.2%	0.576[F]
Bacterial	.0%	2.4%	5.6%	0.145[F]
Papulosquamous Disease	.0%	.8%	.6%	1.000[F]
Pigmentary Disorder	12.5%	25.2%	15.4%	0.055
Disorder of the skin appendage	16.7%	22.0%	14.2%	0.229
Urticaria	4.2%	2.4%	4.9%	0.582[F]
Communicable	31.3%	19.5%	21.0%	0.230
Infestations, Bites, Stings	.0%	3.3%	1.2%	0.436[F]
Dermatophyte Infections	14.6%	4.9%	11.1%	0.079
Viral Infections	14.6%	12.2%	8.0%	0.320
Skin Disease	85.4%	80.5%	77.8%	0.499

Table 13.Prevalence of Various Types of Skin Disease among Police Officers grouped by Frequency of Taking a Bath

On the other hand, **frequency of taking a bath was found to be significantly associated with the prevalence of pigmentary disorder** (p-value < 0.05). Specifically, **lower prevalence of pigmentary disorder** was found among those who indicated **greater frequency of taking a bath** (9.6% prevalence among those who take a bath > 13 times per week).

**Significant at α = 5%;*

C – chi-square test with Fisher's correction, when applicable

	Prevalence (%) among those who take a bath:			p-value[C]
	< 7 times per week	7 to 13 timesper week	> 13 times per week	
Non-communicable	61.9	69.3	61.4	0.359
Dermatitis and Eczemas	35.7	29.8	22.9	0.289
Infestations, Bites, Stings	0.0	1.5	2.4	0.435
Bacterial	0.0	3.9	4.8	0.178
Papulosquamous Disease	0.0	0.5	1.2	0.623
Pigmentary Disorder	16.7	22.4	9.6	0.038*
Disorder of the skin appendage	9.5	17.6	21.7	0.241
Urticaria	4.8	3.9	3.6	0.954
Communicable	21.4	22.4	21.7	0.984
Infestations, Bites, Stings	2.4	2.0	1.2	0.867
Dermatophyte Infections	9.5	9.8	8.4	0.941
Viral Infections	7.1	10.7	12.0	0.699
Skin Disease	81.0	81.5	75.9	0.557

Table 14. Prevalence of Various Types of Skin Disease among Police Officers grouped by Number of Personal Items Shared with Others

Overall prevalence of skin disease was found to be **significantly associated with the number of personal items shared with others** (p-value < 0.05). Specifically, the proportion of police officers with at least one skin disease was found to **increase as more personal items are shared with others**.

**Significant at α = 5%; C – chi-square test with Fisher's correction, when applicable*

	Prevalence (%) among those who share __ personal items:			p-value[C]
	2 or more	One	None	
Non-communicable	72.70	71.70	60.90	0.085
Dermatitis and Eczemas	30.90	36.70	25.50	0.240
Infestations, Bites, Stings	2.70	1.70	0.60	0.369
Bacterial	6.40	3.30	1.90	0.158
Papulosquamous Disease	0.90	0.00	0.60	0.646
Pigmentary Disorder	14.50	20.00	21.10	0.381
Disorder of the skin appendage	19.10	23.30	14.30	0.252
Urticaria	4.50	1.70	4.30	0.546
Communicable	27.30	13.30	21.70	0.110
Infestations, Bites, Stings	0.90	3.30	1.90	0.537
Dermatophyte Infections	11.80	5.00	9.30	0.345
Viral Infections	14.50	5.00	9.90	0.144
Skin Disease	90.00	80.00	73.90	0.005*

Table 15. Prevalence of Various Types of Skin Disease among Police Officers grouped by Presence of Bed Bugs in Sleeping Area

Prevalence of urticaria was found to be significantly **associated with presence of bed bugs** in the police officers' sleeping area (p-value < 0.05).

**Significant at α = 5%;*

C – chi-square test with Fisher's correction, when applicable

	Prevalence (%) among those:		
	With bed bugs in sleeping area	No bed bugs in sleeping area	p-value[C]
Non-communicable	68.30	66.10	0.780
Dermatitis and Eczemas	29.30	29.40	0.989
Infestations, Bites, Stings	4.90	1.00	0.120
Bacterial	4.90	3.50	0.652
Papulosquamous Disease	2.40	0.30	0.235
Pigmentary Disorder	12.20	19.90	0.237
Disorder of the skin appendage	19.50	17.10	0.707
Urticaria	9.80	2.40	0.037*
Communicable	19.50	22.00	0.715
Infestations, Bites, Stings	0.00	2.10	1.000
Dermatophyte Infections	12.20	8.70	0.560
Viral Infections	7.30	10.80	0.783
Skin Disease	80.50	79.40	0.868

Table 16.Prevalence of Various Types of Skin Disease among Police Officers grouped by Place of Residence

Prevalence of **dermatitis and eczemas and at least one non-communicable skin disease** were found to be significantly **associated with place of residence** (p-values < 0.05).

Prevalence of **dermatophyte infections and at least one communicable skin disease** (28.6% and 57.1%, respectively) were found to be significantly **higher for those staying in the barracks or in both their home and barracks** as compared to those staying at home.

**Significant at α = 5%;*

C – chi-square test with Fisher's correction, when applicable

	Prevalence (%) among those who live:			
	At home	In the barracks	Both	p-value[C]
Non-communicable	71.70	55.20	14.30	0.000*
Dermatitis and Eczemas	32.50	23.00	0.00	0.021*
Infestations, Bites, Stings	1.70	1.10	0.00	0.842
Bacterial	4.20	2.30	0.00	0.536
Papulosquamous Disease	0.40	1.10	0.00	0.751
Pigmentary Disorder	21.10	12.60	0.00	0.098
Disorder of the skin appendage	16.90	19.50	0.00	0.406
Urticaria	3.80	3.40	14.30	0.527
Communicable	17.70	31.00	57.10	0.003*
Infestations, Bites, Stings	1.30	3.40	0.00	0.420
Dermatophyte Infections	6.30	16.10	28.60	0.012*
Viral Infections	10.10	10.30	28.60	0.293
Skin Disease	80.60	78.20	71.40	0.763

Table 17. Prevalence of Various Types of Skin Disease among Police Officers grouped by Place of Work

Prevalence of papulosquamous disease was found to be significantly **associated with place of work** (p-value < 0.05). Specifically, the proportion of papulosquamous disease was found to be **higher for those working in the field** (2.9%) as compared to those working in the office or in both office and field.

On the other hand, **prevalence of pigmentary disorder** was found to be **higher among those assigned in the office** (22%).

**Significant at α = 5%;*

C – chi-square test with Fisher's correction, when applicable

	Prevalence (%) among those who work:			
	In the Office	In the Field	Both	p-value[C]
Non-communicable	68.80	59.40	42.90	0.155
Dermatitis and Eczemas	29.20	29.00	28.60	0.999
Infestations, Bites, Stings	1.60	1.40	0.00	0.893
Bacterial	4.00	2.90	0.00	0.697
Papulosquamous Disease	0.00	2.90	0.00	0.044*
Pigmentary Disorder	22.00	7.20	14.30	0.020*
Disorder of the skin appendage	17.60	15.90	14.30	0.929
Urticaria	3.60	5.80	0.00	0.551
Communicable	20.00	26.10	28.60	0.496
Infestations, Bites, Stings	2.00	1.40	0.00	0.836
Dermatophyte Infections	8.40	11.60	14.30	0.644
Viral Infections	9.60	13.00	14.30	0.670
Skin Disease	80.60	78.20	71.40	0.191

Discussion

- Overall prevalence of skin disease was found to be 80%.
- 8 out of every 10 police officers have at least one skin disease
- 7 out of these 8 have non-communicable skin disease.



Discussion

- **Dermatitis and eczemas were the most common skin diseases** with an estimated prevalence of **29.7%** followed by **pigmentary disorder (19.0%) and disorder of skin appendages (17.2%)**.
- **Age, gender, position and years of service in the PNP, place of residence and work, and hygienic practice**s were found to be **associated with various skin disease(s).**
- Although they may cause few fatalities, this **has a significant role in combative performance, troop morbidity and poor morale** of the police personnel.

Conclusion



- This study revealed the **high prevalence of skin diseases among police officers in Camp Crame.**
- **Intervention programs** should be focused on modifiable risk factors such as intensive information campaigns on proper hygiene **to bring down skin disease prevalence**, subsequently **leading to a more efficient service delivery**.

Thank you!