

## Educational actions to promote the skin health of fishermen in Rio de Janeiro, Brazil

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### Abstract

During an epidemiological survey on 388 fishermen in six fishing communities in Guanabara Bay, Rio de Janeiro, inadequate prevention and treatment of aquatic accidents were observed. Based on these findings, it became clear that educational measures were needed to promote the health of fishermen. Educational and cartoon booklets were prepared, alerting those working in the fishing industry with advice about the management of major accidents as well as photoprotection, awareness of skin cancer and the risk of pollution. The booklets contained preventive and therapeutic information on both fishing activity as well as the general health of fishermen. These materials were distributed in the week of June 26-30, 2017 at AquaRio (a marine aquarium in Rio de Janeiro), in three of the six fishing communities included in our study, and at a school in the district of one the fishing communities.

### KEY WORDS

Public Health, Health Education, Occupational Risks, Fishermen, Venomous Fish, Poisonous Fish, Poisonous Animals



Fig 1: Distribution of the 388 fishermen participating in the research in Guanabara Bay fishing communities (wards Z-8, Z-9, Z-10, Z-11 and Z-13).

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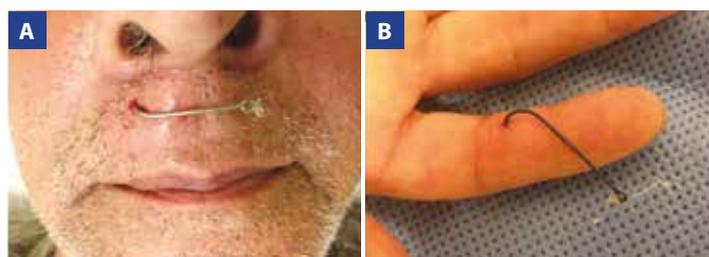
# Educational actions to promote the skin health of fishermen in Rio de Janeiro,

The educational booklets' information was considered easy to grasp by all fishermen, school children and AquaRio visitors who received them. Whilst younger members of the public were more receptive to adhering to the instructions concerning photoprotection and accident prevention/treatment, older fishermen, in the same population, despite recognizing the usefulness of the information in the booklets, were more resistant to adhering to the guidelines and tended to stick to some traditional inadequate procedures to treat fish accidents, remained resistant to applying sunscreen regularly and/or wearing sunprotective clothes for either cultural reasons or difficult to change misconceptions.

## Introduction

Fishing is one of the important economic activities in Brazil, but there are few studies on the health of fishermen.<sup>1</sup> From 2014 to 2016, a descriptive epidemiological survey was carried out in six fishing communities (wards Z-8, Z-9, Z-10, Z-11, Z-12 and Z-13) (Fig. 1) in Guanabara Bay, Rio de Janeiro, Brazil. Three hundred and eighty eight fishermen were interviewed. The results of this study revealed relevant data on the fishermen's skin health: the longer the time spent fishing and with increasing age of the fishermen, the greater the possibility of injury resulting from this activity; 309 (79.6%) fishermen reported accidents during their work. The main species implicated were *Genidens genidens* (catfish) and *Scorpaena brasiliensis* (red barb fish, orange scorpion fish). *G. genidens* was responsible for 201 (65%) traumatic marine accidents, *S. brasiliensis* caused 56 (18.1%) accidents, and 100% of the cases of accidental poisoning. Eighteen traditional methods, without scientific evidence of efficacy, were used as ancillary measures to manage accidents. These were considered, however, to be either inadequate and/or unsafe, offering potential risks for fishermen's health. Although high doses of repeated intermittent sun exposure as well as high levels of accumulated sun exposure throughout life increased the risk of skin cancer,<sup>2,3</sup> 320 (82.5%) fishermen reported that they never used sunscreen or photoprotective clothes. This risk was aggravated by the high ultraviolet (UV) index observed throughout the year in Guanabara Bay area despite UV index seasonal variations. It is important to highlight that, in summer, the Brazilian Southeast region, where Guanabara Bay is located, records some of highest UV radiation intensities observed in the country, with levels even higher than in the Northeast region. This is due to the geographic position and local climate of the Brazilian Southeast region.<sup>4</sup> The Brazilian Society of Dermatology (SBD) has regular activities concerning skin cancer and photoprotection, including regular skin cancer screening campaigns and school children education on the theme.<sup>4-7</sup> The Ministry of Health of Brazil has a collaborative national project concerning fishermen's health in association with the SBD.<sup>8</sup>

Figures 2-5 illustrate some of the above-mentioned occupational accidents and dermatoses observed in sea fishermen. Based on



**Fig 2: (a) Fishing hook traumatic accident on the face of a fisherman; (b) finger injury by fishing hook.**

the findings of our initial study, it became clear that educational measures were needed to promote the health of fishermen. Therefore, a further objective was to promote fishermen's skin health by dissemination of information on the use of first aid measures in



**Fig 3: (a) Facial ulcerated nodular pigmented basal cell carcinoma in middle-aged fisherman; (b) dermoscopy of pigmented basal cell carcinoma showing ulceration, arboriform vessels and blue gray pigment; (c) chronic photodamage, poikiloderma, field cancerization, numerous actinic keratosis, solar lentigines, solar elastosis and (d) pre sternal squamous cell carcinoma in an elderly fisherman.**

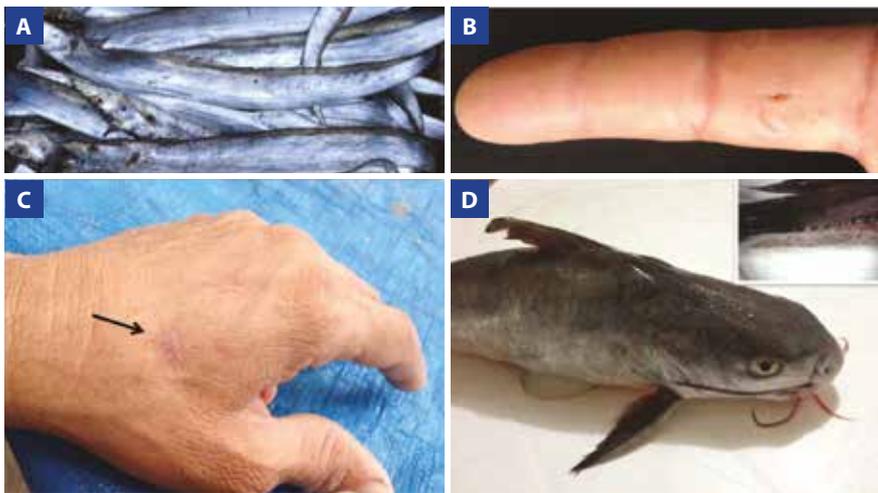
the case of accidents by aquatic animals, insects, fishing materials and sharp objects, as well as photoprotective measures, to prevent skin cancer and risk of pollution and other environmental hazards. Based on the feedback obtained from different groups of subjects-fishermen (from communities Z-8, Z-10, and Z-13), school children (from community Z-10), and school children and visitors who had visited AquaRio, who all received educational materials developed by the group (handbook and/or cartoon), the authors plan to implement further improved educational material and strategies for fishermen's occupational risks, photoprotection, and other sea-related dermatoses.

## Materials and Methods

Fishermen in Guanabara Bay were invited to participate in the survey to increase awareness of skin health using a visual display announcing the study that was set up at strategic locations in fishing



**Fig 4: (a) Sea urchins; (b) multiple puncture wounds by black sea urchin (*Echinometra lucunter*) spines; (c) Elbow synovitis caused by sea urchin spines - fiery-red, indurated and tense plaque with hyperkeratotic nodules; (d) Jellyfish sting showing persistent long-term (4 months) reaction.**



**Fig 5: (a) *Trichiurus lepturus*; (b) recent finger bite by *Trichiurus lepturus*; (c) old hand scar (arrow) from catfish injury; (d) catfish (*Genidens genidens*). Insert showing serrated bony stings ("spines").**

the main clinical features of skin cancer lesions. With respect to photoprotective measures, there were two illustrations with information on how to apply sunscreen and moisturizing cream, daily water needs, physical methods for photoprotection and oral photoprotection (*Polypodium leucotomus*).

A cartoon booklet, "True fishermen stories," was also created using a fictional fisherman's son from Rio de Janeiro who instructs fishermen about the management of fishing accidents, sun exposure and the importance of seeking medical advice when necessary. The fisherman's son character was based on a real life fisherman from community Z-13 (Fig. 8). A health promotion lecture involving all students, teachers and staff was held in the schoolyard in the district of community Z-10. Two deaf and mute students also attended the lecture aided by the sign language made by a teacher.

communities. This showed illustrations of accidents caused by fish and contained the following questions: A) Do you worry about the effects of the sun on your skin? B) Have you ever been injured during fishing? C) Have you ever received medical advice regarding the precautions you should take to prevent accidents? These questions were used to encourage participation in the study (Figs. 6-7).



**Fig 6: Fishermen in ward Z-10 in Ilha do Governador.**

An educational booklet, called "Skin health of fishermen" was produced alerting those working in the fishing industry to the management of major accidents from aquatic animals, sharp objects and fishing materials, as well as advice on photoeducation, awareness of skin cancer and the risk of pollution, both as these affected fishing activity as well as general health. The booklet had illustrations of major accidents observed in this study with their respective first aid remedies, warning about pollution particularly due to objects abandoned on beaches that may be responsible for health risks to fishermen and the environment. The risk of skin cancer by intermittent and cumulative effect of sun exposure was also highlighted, as well as



**Fig 7: Fishermen in ward Z-13 in Copacabana beach.**



**Fig 8: The cartoon character and the real life fisherman/diver that inspired it.**

Educational materials were available in Portuguese, English, Spanish, French and German. All material handed out in Rio de Janeiro was in Portuguese. The educational booklets used in this work can be accessed at the following websites: <http://web.ilds.org/>; <http://www.cilad.org/>; <http://protetoresdapele.org.br/>; <http://sbdfl.com.br/>. A total of 20,000 booklets and 5,000 cartoon books were printed. The materials were distributed in the week of June 26-30, 2017 at AquaRio, the largest marine aquarium in Latin America, in ward Z-8 in Jurujuba, during the celebrations of the feast of Saint Peter's day, patron saint of fishermen, in ward Z-10 in Ilha do Governador, in ward Z-13 in Copacabana beach, and in the municipal school Cuba, located near the ward Z-10, in which the students are mostly fishermen's children. For distribution in other fishing communities, booklets and cartoon books were delivered to the Fundação Instituto de Pesca do Estado do Rio de Janeiro (FIPERJ), an agency linked to the Secretary of State for Regional Development, Supply and Fishing, which is responsible for promoting, through public policies, the sustainable development of aquaculture and fisheries in the state of Rio de Janeiro.

This study was approved by the Research Ethics Committee of the Hospital Federal dos Servidores do Estado do Rio de Janeiro

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**Fig 9: Dermatology post graduation students from Policlínica Geral do Rio de Janeiro handing out material to school children in AquaRio.**



**Fig 10: The author with school teachers and their pupils at AquaRio.**

(Protocol CEP-HFSE-RJ:000,537) on August 11, 2014. Participation was voluntary and all participants signed an informed consent form. The educational activities were developed based on the rich information and reports gleaned from the initial study, thus providing positive feedback to the local fishing communities for their invaluable co-operation in participating in this study.

## Results

About 10,000 booklets were distributed to visitors on AquaRio (Figs. 9-10), and 500 students of the municipal school Cuba received the educational booklet and the cartoon book (Figs. 11-12). The same educational material was also distributed in the fishing communities (Figs. 13-17).

All those who received these educational booklets considered the information and illustrations to be relevant and adequate to the theme, with the informational messages easy to grasp. Some fishermen, however, even after reading the material, pointed out the difficulty of using photoprotective measures at sea, mainly due to heat, loss of operational efficiency and because of cultural barriers. Some of the fishermen were also unwilling to abandon inadequate or potentially hazardous practices for treating fish injuries or poisoning.

Ophthalmological lesions and other eye diseases, though not the objective of our study, were a relevant spontaneous complaint in the population we interviewed.

## Discussion

Fishing is a hazardous occupation with high mortality. Recommendations based on this data, such as establishing an occupational health service or periodic medical screening, have still not been taken up widely, despite repeated calls. Attempts at reducing work-related ill-health among fishermen need to be based on principles of identifying, and then eliminating or reducing risks.<sup>9</sup>



**Fig 11: Educational lecture at Cuba school with enthusiastic participation of the students.**

Despite a number of measures which have been taken to improve health and safety for all fishermen, there are no occupational health services for fishermen in this region and there is no mandatory health screening.



**Fig 12: Students reading their educational cartoons at Cuba school in colony Z-10.**

This may be due to the self-employed status of many workers in the fishing industry. This important activity that supplies our tables with affordable good quality protein, has also suffered a decrease in the number of fishermen working in Rio de Janeiro. Harsh working conditions as well as other, better-paid activities are possible causes for the diminishing number of fishermen in the state.

The authors emphasize that the gap between knowledge of the need for photoprotection and the adoption of photoprotective



**Fig 13: President of fishermen's community Z-8 receiving material to be distributed to local fishermen and their children.**

measures is more of a cultural barrier than a financial issue. Sunscreen was thought of as a cosmetic or it was said to be disagreeable or too oily a cream for everyday use in fishing work rather than a protective professional product invaluable in an extremely photo-exposed activity. Most fishermen had never used sunscreen and those who knew the concept of sunscreen



**Fig 14: The author at Jurujuba beach, Z-8 area, handing out booklet near fishing boats.**

through adequate clothing said they would not wear this because they thought that it would be too hot. Another observation seen during the distribution and orientation that formed part of the educational actions was the culture of popular or traditional treatments, such as the application of fish's viscera and urine to the lesions caused by some species of fish. Despite the information that such methods have no scientific

basis for efficacy and could further damage lesions with secondary infection, adult fishermen said they would continue to use these methods because of their own belief or experience of "efficacy" in treating or relieving symptoms in accidents with fish, often going to some length in showing scars caused by accidents so treated. On the other hand, in the lecture given to the children, most of them fishermen's children, all without exception, agreed that such popular methods would not be adequate and the great majority said that in cases of accidents the first step would be to see the doctor and obtain adequate treatment. In AquaRio, where some sunscreen samples were distributed with the educational material, some educated parents (physicians from abroad visiting Rio) carefully applied sunscreen to their children then and there.

## Conclusion

Children were more receptive to the educational material than adults, though both groups admitted the usefulness of the booklets. The experiences of fishermen handed down to children, enhanced by the possibility of educating the children in these communities in respect of photoprotection, prevention of marine dermatoses and fish accidents may create a virtuous educational cycle that may help to improve fishermen's health. This is where authors plan to focus future educational efforts as well as expanding the study to other



**Fig 15: Located at Copacabana beach, Z 13 has the largest area of all. Dr. Fred Bernardes Filho talking to local fisherman about the educational booklet.**

areas in the state of Rio de Janeiro with the aid of AquaRio and FIPERJ.

Studies on marine/aquatic dermatoses related to fishermen's health<sup>10,11</sup> clearly point out the many hazards of this industry and the utmost importance of prevention and prompt adequate treatment of accidents and dermatoses. Direct contact with fishermen



**Fig 17: Professor Omar Lupi, Dr. Bernardes Filho, the fisherman Esdras and Dr. Towersey at Z-13 (Cobacabana beach) next to the poster about educational material being handed out to local fishermen.**

in Guanabara Bay and their sharing of knowledge and day-to-day experience during the interviews inspired us in creating this educational material and we do hope this theme will inspire many more researchers to further investigate the many aspects of this global ancient activity.



**Fig 16: Fisherman from Z-13 reading educational booklet instructions.**

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The authors are grateful for support from: FIPERJ, AquaRio, Instituto Protetores da Pele, Instituto de Dermatologia Prof. Rubem David Azulay, Ribeirão Preto Medical School, University of São Paulo, Brazilian Society of Dermatology and its Regional Fluminense and Rio de Janeiro, National Academy of Medicine of Brazil, Colegio Ibero-Latinoamericano de Dermatologia (CILAD) and International League of Dermatological Societies (ILDS). The authors also thank and acknowledge the outstanding work of the journalists Blanche Amancio, Daniela Antunes and Bruna Zanuto for their editorial coordination and the cartoonist José Carlos Fecuri.

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# Leprosy Reactions in Post-elimination stage: Evidence from Bangladesh

(Abstracted by the author from Mowla MR *et al* JEADV 2017;31(4);706-711)

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Leprosy reaction (LR) is a major cause of morbidity, disability and deformity in patients with leprosy. It can occur before, during and after multi-drug therapy (MDT) and can be difficult to manage in patients with severe reactions.<sup>1</sup> Little data has been published on the epidemiology of LRs in Bangladesh. We conducted a descriptive retrospective cross-sectional study carried out using the register records of patients attending the leprosy clinic in Chittagong Medical College Hospital (CMCH) during the period 2004 and 2013 to examine the patterns and prevalence of LRs in order to develop effective prevention strategies as well as efficient treatment methods. CMCH is the oldest tertiary care



**Nasal bridge deformity due to LL**

teaching hospital of the country. The leprosy clinic of CMCH caters for the patients from the Chittagong city as well as from neighbouring districts. MDT is available at the leprosy clinic of CMCH. We studied the patients' cards and the following clinical data were considered: age, sex, clinical type of leprosy according to Ridley and Jopling classification<sup>2</sup>, World Health Organization (WHO) classification for treatment, type of LRs, reactional episodes (REs) including onset, duration of reaction, smear positivity with bacterial index (BI) and deformity status.

Out of 670 patients 300 (44.78%) had a leprosy reaction. The case detection was active in 55 (8.21%) patients, and 615 (91.79%)

## KEY WORDS

*Leprosy reaction, Bangladesh, multi-drug therapy, healthcare provision*

were passive. There were 232 (34.63%) PB patients and 438 (65.37%) MB. Smear positive cases were only 139 (20.75%). The prevalence of reaction was found to be 166 (55.33%) for Type 1 or reversal reactions (T1R); 49 (16.57%) had erythema nodosum leprosum (ENL) or Type 2 reactions (T2R) and 85 (28.33%) had neuritis. Among LR



**Borderline lepromatous leprosy**

patients 234 were male (78%) whereas 66 were female (22%). Four age groups are computed. The calculated age-specific cumulative detection rates showed the highest case detection in > 40 years group at 115 (38.33%). The rate in children (<14 years) was less at 7 (2.33%). The youngest patient with a reaction was 8 years old and the oldest patient was 70 years old.

BT was the most common 106 (35.33%) group in RR while LL was the most common 37 (12.33%) in ENL. Of the 300 patients 157 (52.33%) belonged to borderline tuberculoid (BT) followed by 70 (23.33%) borderline lepromatous (BL), 42 (14%) lepromatous (LL), 19 (6.33%) pure neuritic (PN), 10 (3.33%) borderline (BB) and 2 (0.67%) tuberculoid (TT) group. The prevalence of T1R in TT, BT, BB, BL and PN was 2 (0.67%), 106 (35.33%), 8 (2.67%), 49 (16.33%), and 1 (0.33%) respectively. The prevalence of T2R in BL



**Leg ulcer deformity due to leprosy**

and LL was 12 (4%) and 37 (12.33%) respectively. The prevalence of neuritis in BT, BB, BL, LL and PN was 51 (17%), 2 (0.67%), 9 (3%), 5 (1.67%) and 18 (6%) respectively.

More than half of the patients 169 (56.33%) had reactions at the time of presentation while 85 (28.33%) and 46 (15.33%) of patients developed a reaction during and after MDT respectively.

Regarding the onset of T1R, the majority 89 (29.67%) had a reaction at pre-MDT, but 57 (19%) and 20 (6.67%) had an onset during MDT and post-MDT respectively. Most of the patients 30 (10%) had T2R at pre-MDT but 10 (3.33%) and 9 (3%) patients had reaction during MDT and post-MDT respectively. Of the patients who had neuritis, 50 (16.67%) had neuritis present before treatment, 18 (6%) during MDT and 17(5.67%) post MDT.



**Erythema nodosum leprosum**



**Borderline tuberculoid leprosy**

The RR group presented with  $\geq 6$  skin lesions in 96 (57.83%) and  $\geq 2$  nerves involvement in 107 (64.46%) patients. The ENL presented chiefly with papulo-nodular lesions 45 (91.84%) followed by pustule-necrotic lesions 4 (8.16%), 33 (67.35%) had neuritis, 24 (48.98%) fever, 5 (10.20%) arthritis, 6 (12.24%)



**Reversal reaction**



**Reversal reaction**

lymphadenitis and iritis 2 (4.08%). Bacterial index  $\geq 3$  had been demonstrated in 34 (60.71%) of the patients with ENL.

The high prevalence of reactions may reflect a large population of lower socio-economic status and failure of the leprosy services to detect the new patients in a timely manner, inadequate patient management due to resource constraint and patient non-compliance to MDT. Even after identifying symptoms, lack of health education and hygiene result in patients relying on non-medical, herbal and traditional healers with resultant delay in seeking medical treatment. It is possible that new cases are being detected late owing to inadequate community awareness of consequences of the disease and continued surveillance is required to detect reaction and to ensure good patients compliance with treatment.

The incidence of LR seemed to be more than three times common in BT (52.33%) than in LL (14%). Reactions with nerve function impairment and disability still occurs among MB patients during and after WHO – recommended MDT. The frequency of leprosy reaction might be reduced with timely diagnosis, lower bacillary load and adequate treatment. Early detection and management of LR is very important in preventing disability and deformity, and patients should be educated to undergo regular follow-up examinations. Developing reinforced new therapies to curb LRs is essential for improving leprosy health care services. Information campaigns about leprosy in high risk areas are crucial, so that patients and their families who are historically ostracized from their communities are encouraged to come forward to receive treatment.



**Reversal reaction**

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## CASE REPORT

# Pyogenic Granuloma Simulating Malignant Melanoma

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## Introduction

Pyogenic granuloma is not uncommon; it may occur on the oral mucosa, face and fingers. This rapidly growing tumour is typically a painless sessile or pedunculated mass of varied diameter. Spontaneous haemorrhage or bleeding following trauma is observed in some cases. We report an unusual case of pyogenic granuloma, the pigmented colour of which suggested a melanoma.



## Case report

A 45 year-old man presented with a 3 month history of an enlarging pigmented nodule affecting the left palm. Examination showed a dark well-defined slightly irregular nodule measuring 20 mm in diameter, with an infiltrated base. There was no palpable lymphadenopathy and the rest of the physical examination was normal. Dermoscopy showed a homogeneous diffuse

## KEY WORDS

*Pyogenic granuloma, melanoma, histology, pigmented tumour*

pigmentation without specific vascularization. Excision of the lesion was performed. Histopathologic examination showed an unusual vascular pattern of numerous blood-filled, capillary-sized channels that mostly lacked endothelium and were surrounded by collars of fibrinoid necrosis.



## Conclusion

Melanoma remains the most significant pigmented tumor. The initial diagnosis of suspected melanoma in this case was considered in view of the rapid growth of the lesion and its pigmented character. It is a good example that demonstrates the importance of histology which in this case proved benign.

## RESEARCH ABSTRACT

### THE USE OF SKIN-BLEACHING AGENTS IN SUB-SAHARAN AFRICA

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The use of topical agents to lighten the skin is a widespread and common practice in many countries of Sub-Saharan Africa. The commonest agents used include mercury derivatives, high concentrations of hydroquinones and potent topical corticosteroids. In addition, a significant proportion of bleaching agents are of unknown composition. Frequently, more than one of these topical agents are used concurrently to achieve the desired result. Long term use of these topical agents is frequently associated with adverse effects such as; ochronosis, hypopigmentation, hyperpigmentation, contact dermatitis and skin atrophic disorders associated with telangiectasiae, which result in considerable disfigurement and are difficult to treat or reverse. In addition, certain dermatoses especially of fungal origins, are often modified by the application of topical corticosteroids. A few studies have even reported systemic side effects with inappropriate use. Epidemiological studies investigating underlying reasons for use of skin bleaching agents are very few. It is apparent that these treatments are easily

available and used predominantly by women of all ages and of all socio-economic backgrounds.

The largest epidemiological study to date on use of bleaching agents and associated factors has recently been conducted in Lusaka, Zambia (CF Luhana) on a population cohort comprising 400 people. The study reported a high prevalence (45.3%) of use especially in the 30-39 years, age group (59.8%). There was no significant difference in marital status amongst users. Topical corticosteroids were most commonly used (40.7%). Adverse effects amongst users was high (14.6%). Important contributing factors for use included perception of skin colour where lighter skin was considered more desirable, the influence of male partners who encouraged use, and self-medication for perceived skin disease. Knowledge of adverse effects however did not deter use.

Skin bleaching agents have been used for decades and the trend appears to be increasing. It is associated with an increasing prevalence of adverse effects, which is a serious concern and challenge to community dermatologists in these regions.

Based on work submitted for the Advanced Diploma in Dermatology and Venereology, University of Dar-es-Salaam.

# A DERMATOLOGY-BASED MEDICAL ELECTIVE IN CAMBODIA

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## Organising the elective

In August 2016, as a final year medical student already set on pursuing a career in dermatology, I contacted the International Foundation of Dermatology (IFD) seeking contacts for a 6-week dermatology-based medical elective in a developing country. My first response was from a dermatologist in Cambodia, Professor Mey Sithach, who warmly welcomed my elective placement at his dermatology department in Preah Kossamak hospital in Cambodia's capital, Phnom Penh. Having ample time to prepare, I researched the history of Cambodia and discovered its harrowing past, since which the country has had to rebuild itself piece by piece.

## A brief history of Cambodia

Approximately forty years ago, the Khmer Rouge ("Red Khmers"), an extremist, xenophobic far-right political party, came to rule Cambodia from 1975-1979. The party came to power during a time of turmoil, preceded and darkened by the war between America and Vietnam. Tired of war, the Cambodian population elected this nationalist party which promised to reclaim Cambodia, drive out the Vietnamese and start rebuilding the Cambodian culture. Its vision was to develop a Kampuchea (Cambodia) that was self-sustainable and based primarily upon agriculture.

The party, led by Pol Pot, believed that the only way to achieve this would be to start 'from scratch' and eliminate all of the wisdom and education from the population – this included doctors, scholars, engineers, teachers and anyone else who could potentially jeopardise the vision of the regime. In fact, half of the Cambodian population was eliminated as entire families of these educated people perished; the regime's propaganda slogan: "to kill the weed, one must remove the roots". The education and healthcare systems were dismantled, and city dwellers were forced to work on farms in the country. With help from foreign forces, the Khmer Rouge were eventually defeated and driven out of Cambodia, however this history still resonates loudly in Cambodian culture and the current party, the Cambodian People's Party (CPP) are popular due to their continued efforts to rebuild those systems that were previously in place.<sup>1</sup> This brings me to discuss the re-advent of dermatological healthcare in Cambodia.<sup>1</sup>

## Dermatology in Cambodia

Until the early 2000s, there was no qualified dermatologist in Cambodia. At this point, dermatology was not regarded as a distinct specialty and was more encompassed by the field of internal medicine. Professor Mey Sithach, a German-trained Cambodian doctor, returned to Cambodia as the country's only qualified dermatologist with the vision of reintegrating dermatology back into the healthcare system. He pursued this

## KEY WORDS

*Dermatology provision, Cambodia, medical training, community healthcare*

vision with determination and an indomitable spirit, eventually requesting funding directly from the Cambodian health minister. With additional funding from primarily German and English sources, approval was given to build a dermatology department in Preah Kossamak hospital in Phnom Penh in 2005 – the first one in Cambodia since the Khmer Rouge regime. Professor Mey continues to promote and spread his knowledge of dermatology through many ways including a dermatology diploma, which has now been superseded by a postgraduate dermatology training program that allows 5 junior doctors per year to train for 4 years following medical school (which in Cambodia is for 6 years), alongside his acceptance of international students.<sup>2</sup>

The Cambodian healthcare system is divided into public and private; Preah Kossamak hospital is a public hospital. Some patients have health insurance which covers the cost of consultations, investigations and treatments. However, many patients of Preah Kossamak hospital do not have insurance and funding for their treatments usually comes from the doctors themselves. As a result, doctors working in public hospitals earn minimal to zero salary, and need to work long and unsocial hours in the private sector to gain an income. In addition, junior doctors work tirelessly and stoically during their 4 years of dermatological post-graduate training with no salary. This commitment and altruism from doctors is the engine that drives the modern healthcare system in Cambodia; without it there would be no public healthcare system and it really goes to show how much a collective humanitarian effort can impact an entire population.

The supply of medicine is vast, really only lacking in new and expensive treatments such as biologics, and every week a list is passed around the departments for the professor to sign for which medicines needed replenishing. In addition, the equipment is advanced with the department having powerful dermatoscopes and phototherapy lamps that are readily available for treatment. However, there are no dermatopathology services available to confirm clinical diagnoses, so besides a desktop light microscope and a Wood's lamp, diagnosis is highly dependent on clinical skill. For patients with pityriasis versicolor, I have fond memories of Professor Mey looking up from the microscope in excitement and asking myself and the interns to observe the classic "spaghetti and meatballs" appearance.

## Dermatological conditions in Cambodia

My expectations prior to my elective were to see many rare dermatological conditions that would starkly contrast with those seen in England. I did see some relatively rare conditions such as epidermolysis bullosa, Stevens-Johnson syndrome, tertiary syphilis, systemic sclerosis and ichthyosis.

*Continued overleaf...*



**Severe systemic sclerosis causing ischaemic loss of distal digits.**

In reality, the vast majority of patients have the same common skin conditions as seen in the UK such as eczema, psoriasis and fungal infections; the contrast is found in the severity of these conditions. Due to poverty and poor access to dermatology services (some patients travelled for hundreds of miles to attend the clinic), seeing



**Case of secondary syphilis in a young male patient.**

a doctor is delayed until a skin condition is no longer tolerable. As a result, common skin conditions become significantly more advanced than we would ever see in England.

In an effort to combat this problem, Professor Mey and his team of interns and nurses regularly go on "outreach missions" to provide free dermatology healthcare to provinces that lack access to healthcare. During one of these missions to the neighbouring province of Prey Veng, many young Buddhist monks presented with severe scabies, inevitably spread as a result of their communal living and sleeping arrangements. Global health efforts, such as the

International Alliance of the Control of Scabies (IACS),<sup>3</sup> are in place to tackle the scabies pandemic, and it was a valuable experience to see the the effect that this infestation can have and to understand the difficulties faced in reaching these isolated populations.

## Conclusions

Since the early 2000s, Professor Mey has gone from being the only fully-qualified dermatologist in Cambodia caring for over 11 million Cambodians to rebuilding dermatology healthcare in Cambodia. My elective was inspirational and I would like to contribute towards this humanitarian effort in the future as a qualified dermatologist. Thank you to Professor Mey and his wonderful team for an invaluable experience.



**The author at an outreach mission to Prey Veng province.**

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**The dermatology team during the outreach mission in Prey Veng.**

# Sun Protection in Persons with Albinism The Kilisun Project

Over 200,000 persons are affected with albinism in Sub-Saharan Africa. Apart from social stigmatization, they are greatly at risk of sun damage; in Tanzania, 90% die of skin cancer before the age of 30. Sun protection is essential, but unfortunately commercial sunscreens are prohibitively expensive or dependent on sporadic donations from abroad.



In 2012, pharmacist Mafalda Soto Valdez pioneered the Kilisun project in conjunction with the Regional Dermatology Training Centre (RDTC), Moshi, Tanzania, with the aim of reducing skin cancer and improving quality of life for persons with albinism in sub Saharan Africa. With start-up support from the Canadian NGO



Under the Same Sun, they developed a manufacturing unit to produce a low-cost sunscreen locally, employing persons with albinism. The product is a water in oil emulsion with a Sun Protection Factor greater than 30. Since 2013 the German company BASF has provided ingredients and technical support.



Photos © RDTC and Kilisun

The project has been supported since 2015 by UNICEF Tanzania in conjunction with the Tanzanian Ministry of Health and Social Welfare. The project is co-managed by the RDTC and the Spanish NGO Kilisun Care, with support from the International Foundation for Dermatology (IFD), Africa Directo and Standing Voice.

In her report to IFD in July 2017, Mafalda Soto emphasises that the "Kilisun package" includes not only manufacture of the sunscreen, but also its distribution via community programmes including dermatology clinics and schools, and education, including the prevention of social exclusion. Follow up and audit is important. From January-June 2017, the unit manufactured 5,799 jars for adults and 1,621 for children, distributed to 20 regions of Tanzania (around 62% of the mainland). Over 75% of the sunscreen is distributed via clinics run by community dermatologists and other healthcare workers, enabling the detection and treatment of precancerous lesions, with gratifying results. For example, in the Southern Highlands, there has been over 80% reduction in solar erythema and actinic cheilitis, over 65% reduction in actinic keratosis (reducing the need for cryotherapy) and almost 80% reduction in new skin cancers.

From modest beginnings in 2013, treating 25 children with albinism, the programme now treats over 3,500 persons with albinism of whom over a half are children. In collaboration with BASF, reformulations of the product are being tested in Tanzania, Rwanda and Malawi.

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## NEGLECTED TROPICAL DISEASES WHO e Learning course

The World Health Organization is developing a free online eLearning course on neglected tropical diseases. The first course, now available, is devoted to Post Kala Azar Dermal Leishmaniasis. Registration is simple via the WHO website [www.who.int](http://www.who.int), then typing elearning in the Search box.



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# Community Dermatology Journal



**Comm Dermatol J 2017;13:13-24**

If you have any interest in medical care, whether in well established medical centres or in a rural health centre then the Community Dermatology Journal is for you. It brings up to date, relevant information on the diagnosis and treatment of skin disease and is particularly for health workers in developing countries.

So please share your interest and experience by sending articles, reports and letters that are welcomed by the Editorial Board - see Guidelines for Authors below.

You will find it is also a useful resource for educating health workers and the populations they serve and for keeping in touch with dermatology services in developing countries.

It is published twice a year and over 7,000 copies of each issue are sent, free of charge, to nearly 200 countries. All issues can be viewed online, free of charge, on the IFD website [www.ifd.org](http://www.ifd.org).

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Dermlink is the ILDS/IFD grant giving scheme that seeks to support ILDS Member led initiatives that help patients with skin disease in underserved parts of the world. The 2018 Dermlink application form will be available on the [www.ILDS.org](http://www.ILDS.org) website in the early 2018. Small grants will be available for up to \$5,000 USD. We welcome applications from ILDS Member Societies anywhere in the world.

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