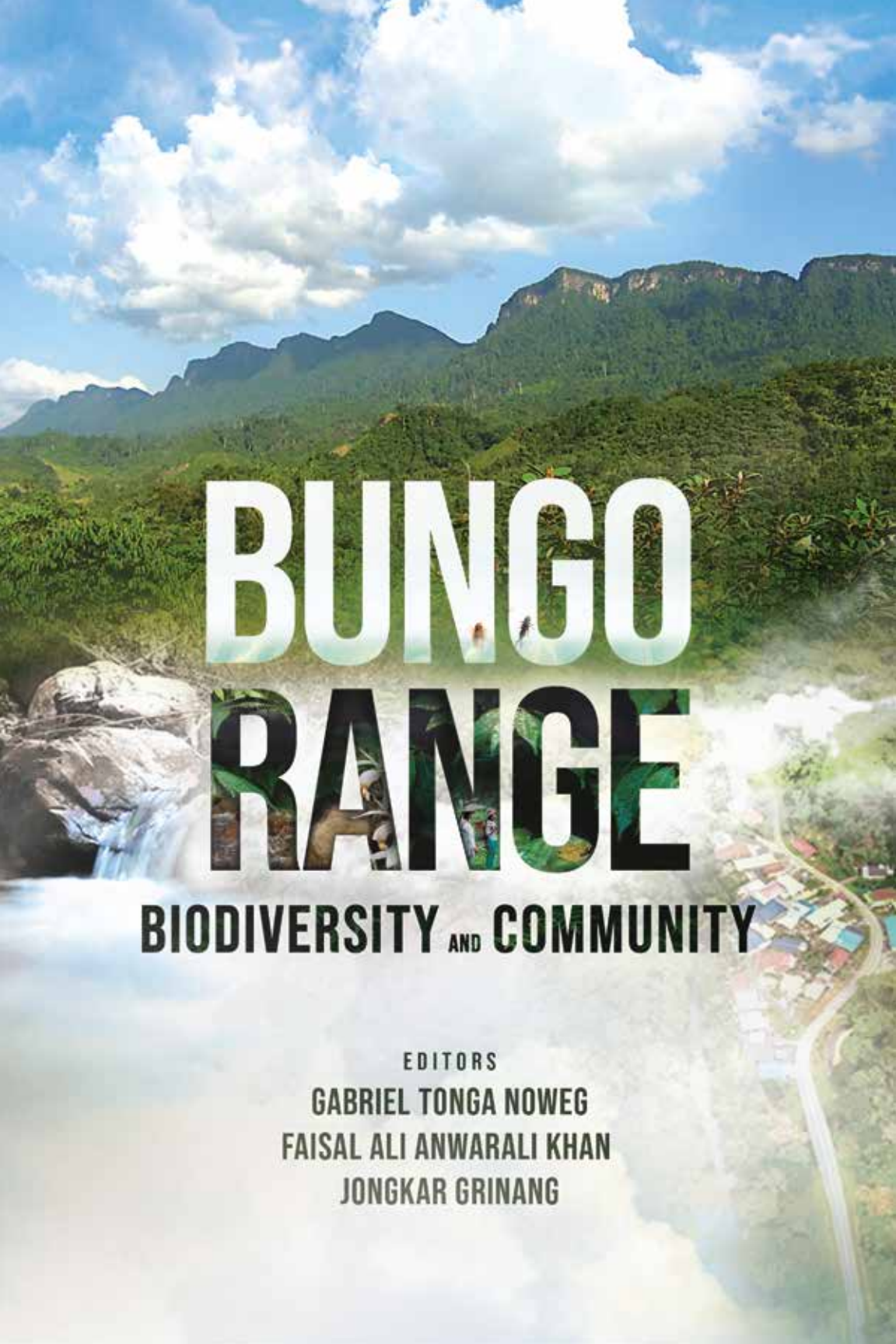

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BUNGO RANGE

BIODIVERSITY AND COMMUNITY

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BUNGO RANGE

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FOREWORD

I am glad to note that this publication is another excellent milestone from Universiti Malaysia Sarawak through the Institute of Biodiversity and Environmental Conservation, in particular exploring and documenting the rich biodiversity and community in Sarawak. The biodiversity and environmental conservation is one of three niche areas of the university, which recognise the need to balance the biodiversity, habitats and human development. As such, the Research Innovation and Enterprise Centre, the university's centre responsible for research and innovation, has actively facilitated and supported research activities, and publications in various platforms available to scientific communities and the public.

I would like to thank staff of the Institute of Biodiversity and Environmental Conservation for continuously conducting good research and documenting crucial information that benefits many users including scientists across the region. It is well in line with the Institute's vision to become a leading center for research in tropical biodiversity and environmental conservation in Borneo and Southeast Asian region. I would like to congratulate the editors for their efforts in compiling and editing the data resulted from a multidisciplinary expedition in Bungo Range in December 2017 into a well indexed research book. I do believe that each article in this book serves its purpose as an important reference to academics, policy makers as well as public audiences. In particular, the findings would be a useful reference for the management plan of Bungo Range National Park that was gazetted on 26 February 2009.

To materialise the multidisciplinary expedition and the publication, the Institute had collaborated with various state agencies and local communities. Therefore, I am acknowledging their support and contribution (both financial and in-kind) to this project. They are Forest Department Sarawak, Sarawak Forestry Corporation,

Sarawak Biodiversity Centre, Sekolah Kebangsaan Tringgus, Pejabat Pendidikan Daerah Bau, Bau District Office, Bau District Council, Klinik Kesihatan Krokong, Bau District Police, Bau Fire and Rescue Station, Bau Hospital, and villagers from Tringgus settlement namely, Kg Bong, Kg Rotan and Kg Nguan. I hope similar collaborative efforts will be pursued in the near future to other protected areas in Sarawak.

To the authors, UNIMAS Publisher, and those who are involved in this publication, keep up with the good team spirit.

Finally, thank you for inviting me to pen my message in this great reading material.

Prof. Dr. Wan Hashim bin Wan Ibrahim
Deputy Vice Chancellor (Research and Innovation)
Universiti Malaysia Sarawak

PREFACE

This publication marks another significant output of the collaborative works between Universiti Malaysia Sarawak and Forest Department Sarawak on biodiversity study and conservation in the State.

In this book, the findings of multidisciplinary expedition to Bungo Range in December 2017 were compiled into 24 chapters covering biodiversity, environment and community under the theme "Bungo Range - Biodiversity and Community". The theme signifies the importance of the pristine mountainous forest of the Bungo Range that supports rich species of flora and fauna, and the uniqueness of community and their customs as well as cultures. The involvement of academics, researchers and the villages in the expedition has enhanced the exchange of knowledge, skill, and experience among the stakeholders, which are reflected in this book. In particular, the participation of the villagers in the expedition had indirectly conveyed the message of the Forest Department Sarawak on the importance of conserving the forest of Bungo Range and preserving local cultures. Ironically, the Bungo Range is becoming a popular tourism destination due to the outstanding sceneries such as mountains, waterfalls, reservoir, and the cultures (e. g., the last ring ladies). Indeed, this book will serve as a useful reading material for researchers, scientists and non-government organization in their research endeavour.

We would like to congratulate the editors, authors and those who contributed to the production of this book. We wish similar outputs shall be achieved from future collaborative work between Universiti Malaysia Sarawak and Forest Department Sarawak. Specifically, we would like to thank the community leaders and heads of department in Bau District for their support throughout the project. Yang Berhormat Miro Simuh for his strong supports of the expedition and launching of the event on 5th December 2017.

We hope this book serves the needs of the audiences either as academic reference or reading material in leisure time. Happy Reading!

Prof. Dr. Mohd Azlan Jayasilan

Director
Institute of Biodiversity and
Environmental Conservation
Universiti Malaysia Sarawak

Datu Hamden Haji Mohammad

Director
Forest Department Sarawak

INTRODUCTION

Sarawak government has voluntarily set aside more than 2.6 million hectares of lands and water bodies as conservation areas under the Heart of Borneo (HOB) Initiatives. The Sarawak's HOB area strech from the north in Limbang Division to the south at Tanjung Datu that boundaries with Sabah, Brunei and Kalimantan, Indonesia. Of the total HOB area, approximately 441,000 hectares are totally protected area comprising national parks, wildlife sanctuaries and nature reserves. The southern part of the HOB contains 10 protected areas many of which are tourism hotspots such as Bako National Park, Kubah National Park, Gunung Gading National Park, Matang Wildlife Centre and Tanjung Datu National Park.

Bungo Range is located at 10° 16' latitude and 110° 9' longitude of the southern side of the HOB, about 500 meter above the sea level. The mountainous primary forest of the area was gazetted as Bungo Range National Park on 26th February 2009 covering 8,096 heactares (**Figure 1.1**). Bungo Range is an important water catchment area in the upstream of the Sarawak Kiri River and Sarawak Kanan River, where the Bengoh Dam is built to provide water supply for Kuching population. The southern end of the Bungo Range is the boundary of West Kalimantan, Indonesia.

In 2017, a multidisciplinary expedition to Bungo Range was conducted as one of the activities organized in conjunction with UNIMAS's Silver Jubilee Celebration. The Institute of Biodiversity and Environmental Conservation had led the expedition with the support of Forest Department Sarawak and other Institutes as well as Faculties within the university. The goal of the expedition was to increase the visibility of UNIMAS not just to the Tringgus community, but also to answer the call of the Sarawak government that wants to emphasise the implementation of Digital Biodiversity

in this state. The expedition was conducted for two weeks with the launching of the event held on 5th December 2017 at Tringgus settlement area.

Despite the earliest exploration in the area back to year 1880s, there is a lack of information pertaining to biodiversity and socio-economy, which are neccesary to enhance biodiversity conservation, and boost local economic activities in the area. The expedition had produced substantial baseline data for the management of Bungo Range National Park, and highlight the area as a tourism destination, which eventually would benefit the local community in the area. The findings of the expedition are compiled herewith, comprising historical exploration in Bungo Range, water resource, aquatic biodiversity, floristics, mammals, birds, reptiles, amphibians, insects, and health and socio-economics of the locals. In summary, this book reported a total of 313 spcies of plants mainly orchids and zingers, and 298 species of wildlife among others are 105 birds, 39 mammals, 92 insects, 27 reptiles, 17 amphibians, and 59 aquatic lives. Additionally, the use of natural resources by local community in Tringgus is also presented in this book.

Because the expedition had only covered a small area of the southern section of the Bungo Range, gaps of information in this edition are expected, which suggest more explorations are needed in the near future. In this regard, the editors would like to acknowledge the contribution of the authors of each article in this edition. This edition may not stop here, and we wish to be working with you all again!

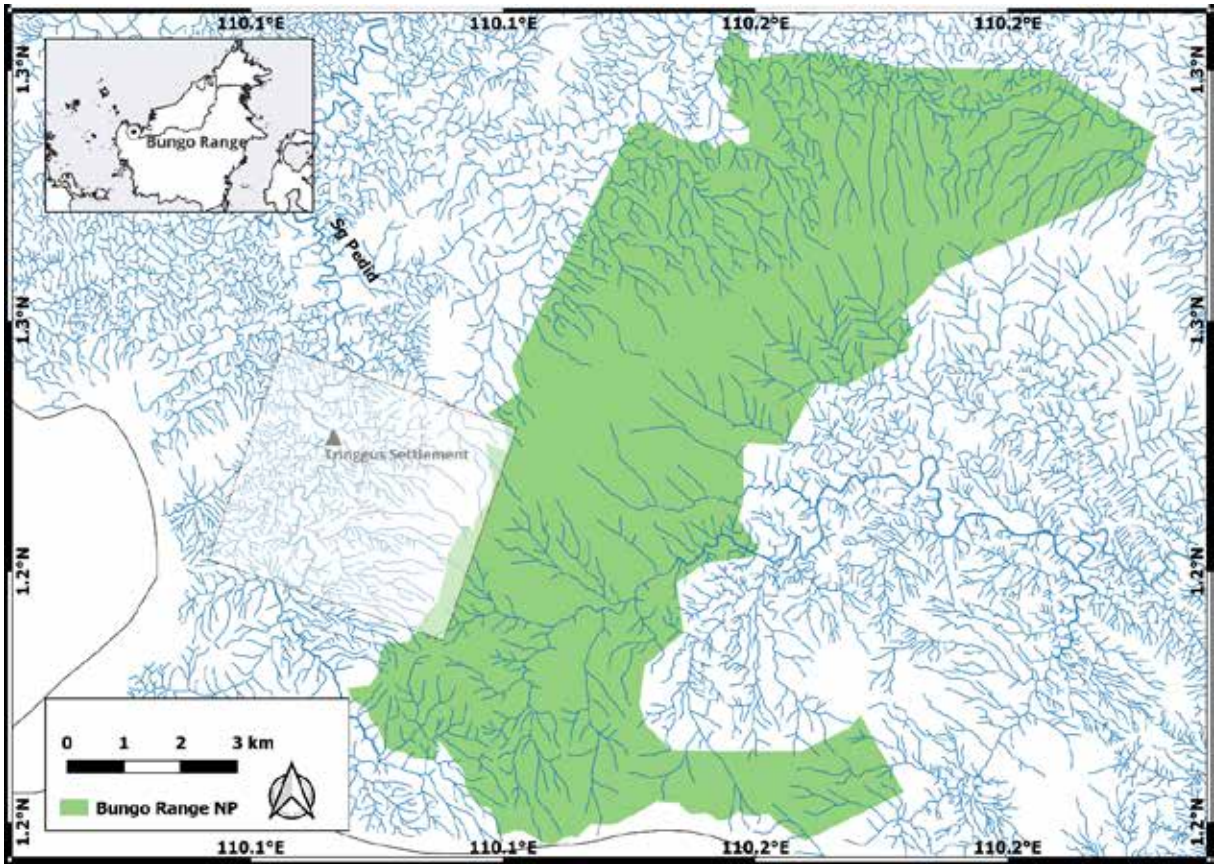

Figure 1.1. Map of Bungo Range National Park and the expedition area (shaded box).

BUNGO RANGE
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THEME:

GEOLOGICAL STUDY AND ZOOLOGICAL EXPLORATION

BUNGO VILLAGERS' RENDITION OF NOSE AND THROAT CANCER

Su-Hie Ting, Yuwana Podin, Monica Kah-Pei Liaw, Lipina Jintang and Myra Ungau

Introduction

"We have a very good environment here. Our water is very clean". This is the refrain I hear from the Bungo villagers when I visited them in November 2017, as part of the UNIMAS expedition team. Indeed, the rounded stones, shaped by the flowing water, are clearly visible in the river. The water is not yellowish like the Rejang River which I am used to seeing (I grow up in Sarikei and Sibu).

Before I went on the Bungo expedition, I was full of trepidation – a Chinese researcher going to a Bidayuh kampung and not knowing a word of Bidayuh. It is like *rusa masuk kampung* (deer entering the village), as the Malay saying goes. I went with my co-researcher Dr Yuwana Podin and my postgraduate students (Monica, Lipina and Myra). We wanted to speak to the Bungo villagers and ask them about their experiences and views of nose and throat cancer, also referred to as nasopharyngeal cancer. I wondered if I would be able to conduct the interviews. Would we be welcomed?

My fears were unfounded. The Bungo villagers welcomed us into their homes, and they made time to talk with us. They let us into their world and what they thought of nose and throat cancer.

Background on Bidayuh participants in our study

We spoke to 77 Bungo villagers, 36 male and 41 female. There was no age barrier. We had a good spread of age groups from teenagers to senior citizens in their seventies, which allowed us to have a diversity of views on nose and throat cancer. Myra attempted to interview an 80-year old grandmother but she has hard-of-hearing and she could not proceed with the interview. It was a Bidayuh village, so a majority of our participants were Bidayuh. We interviewed only four non-Bidayuh (1 Malay, 3 Chinese) who live in Bungo due to intermarriage or work. There was a school in the village, and some of the teachers and staff were from elsewhere but stayed in the village.

The Bungo village was homogeneous. Almost all the Bidayuh participants were Christians, belonging to the Roman Catholic denomination. The men were mostly farmers and construction workers. The women also helped out in the small-scale agricultural activities. We interviewed some of them in the morning. I remember one of the women telling me that she wanted to *pergi kebun*, planting corn and padi. She left the house with her basket (filled with farming implements) on her back and walked along a small path going uphill and disappeared into the jungle.

The monthly income of the Bungo participants is low. Forty of the participants said that they were not working while another 31 said that they had incomes less than RM2000 per month. Only six had income between RM2000 and RM4000 per month. Going by the current government categorisation of income levels, the Bungo villagers are mostly in the B40 (Bottom 40%) income bracket of below RM3,855 in 2014 (United Nations Development Programme, 2020). The average monthly household incomes of the M40 group (Middle 40%) and T20 group (Top 20%) are RM6,502 and RM16,088 respectively (Department of Statistics, Malaysia, 2017). In 2023, the B40 income is below RM4849 while the M40 income is RM4,850-RM10,959 and the T20 income is above RM10,960 (Department of Statistics, Malaysia, 2019).

Table 25.1. Demographic background of participants (N=77).

		Frequency	Percentage
Gender	Female	41	
	Male	36	
Age	Below 20	12	
	21-29	17	
	30-39	15	
	40-49	12	
	50-59	15	
	60 and above	6	
Ethnic group	Malay	1	
	Chinese	3	
	Bidayuh	73	
Religion	Muslim	1	
	Christian	71	
	Buddhist	2	
	Others	3	
Marital status	Single	26	
	Married	45	
	Divorced	2	
	Widowed	2	
Monthly income	Not working	40	
	Less than RM2000	31	
	RM2000-RM3999	5	
	RM3000-RM4999	1	
Highest education	Did not attend school	6	
	Primary 6 or below	22	
	Form 3	12	
	Form 5	27	
	Form 6	6	
	Degree	2	

The educational levels of the Bungo villagers are mostly up to Form 5 (**Table 25.1**). Six of them did not attend school, and they were mostly the older villagers. Surprisingly 22 had only primary school education while 12 had completed Form Three education and 27 had completed Form Five education. Six of them had completed Form Six education and there were two degree-holders. Among these was a retired school principal.

Prevalence of nose and throat cancer in Malaysia

Nose and throat cancer is a cancer that develops in the head and neck region. The early signs are similar to common cold, which is why they are often ignored. Fles et al. (2016) stated that nose and throat cancer may present with:

1. nosebleed which may flow into the throat, causing blood-tinged phlegm;
2. pain or blockage in the ear;
3. loss of hearing;
4. headache;
5. double vision;
6. facial pain;
7. numbness; and
8. a lump in the neck

A majority of nose and throat cancer incidence is detected from third stage onwards. If the cancer can be diagnosed earlier, the outcomes of treatment are better. Patients will also have higher chances of survival. Nose and throat cancer are often treated using surgery, chemotherapy and radiotherapy.

Nose and throat cancer ranked fifth among the common cancers most common cancers in Malaysia. There has been a slight drop in number of nose and throat cancer incidences over the years based on available data (**Table 25.2**).

Table 25.2. Age-standardised rates for nose and throat cancer incidences among men and women in Malaysia (per 100,000).

Year	Men	Women
2003[1]	10.2	3.6
2006 (in West Malaysia)[2]	8.5	2.6
2007-2011 (Malaysia)[2]	6.4	2.2

Note:
[1]Pua et al. (2008)
[2]Cancer Registry (2006; 2011)

The Malaysian cancer statistics suggest that some groups are more prone to nose and throat cancer. Devi et al. (2004) reported that the men among the Chinese and Malay are more likely to get nose and throat cancer, compared to the women, whereas among the ethnic groups, the Sabah and Sarawak indigenous groups are more at risk of getting nose and throat cancer. The incidence among Indians is low.

Perceived causes of nose and throat cancer

From our interviews, we found out that the Bungo participants believed that environmental pollutants, lifestyle (food, exercise) and genetic factors cause nose and throat cancer. Of these, pollutants and lifestyle rank much higher than hereditary factors. They were also more interested to find out more about on pollutants and lifestyle, but less interested in the hereditary factors.

As many of the men in the village either worked in the construction industry or were farmers, it is interesting that many mentioned cigarettes smoke, cement dust, sawdust, padi husk, and weed killers as possible causes of nose and throat cancer. Cement dust is also highlighted as an environmental pollutant that can potentially cause nose and throat cancer by the Kuching City participants in Ting et al.'s (2018) study. However, because of the different environment in the city, the city participants gave car smoke, insect sprays, cleaning detergents such as Chlorox, and fertilisers as potential causes of nose and throat cancer. Nose and throat cancer has been closely associated with industrial exposure to chemical fumes and wood dust (Khlifi & Hamza-Chaffai, 2010; Tan & Loh, 2010; Yuan et al., 2011, as cited in Micklem, 2014).

Two Bungo participants (B1, B16) mentioned that nose and throat cancer is due to infection but did not use the word "virus". In fact, nose and throat cancer has been linked to the Epstein-Barr virus. The Epstein-Barr virus infection is seen in undifferentiated nasopharyngeal carcinoma, which is prevalent in the southern Chinese population (Tsao et al., 2017). However, the association of nose and throat cancer with the Epstein-Barr virus is a less known fact, and it is interesting that two Bungo participants had some awareness of this.

An interesting finding is the belief that nose and throat cancer is due to chance, or luck in other words. As the Bungo participants were overwhelmingly Roman Catholic Christians, they strongly believed that God has control over their lives, including whether or not they

got nose and throat cancer. The Malaysian university students in Sim and Ting's (2018) disagreed that people get cancers because they are unlucky. Attributing cancer to bad luck (stochastic mutation events during DNA replication) is a layman way of saying that it is impossible to predict exactly who will develop cancer and who will not (Albini et al., 2015), when other known risk factors cannot seem to explain the incidence in the population. The danger of attributing the cause of cancer to luck or God is that people can view all types of cancer as unpreventable and, therefore, do nothing to avert the risk of getting cancer (Ashford et al., 2015). However, the Bungo participants did not succumb to the deterministic view of diseases because they reported confidence to make lifestyle changes involving diet and exercise, avoidance of certain food (e.g., salted and preserved food), and regular cancer screening (Section on "Confidence to take nose and throat cancer preventive measures").

Risk of getting nose and throat cancer

From our research during the Bungo Expedition 2017, we only heard of one case which sounded like nose and throat cancer. He is the husband of a Bungo resident (B11) whom we interviewed. He is from Serian. After much reluctance and at the prompting of his wife, he finally went to see the doctor. The nose and throat cancer were diagnosed six months before our interview with his wife. He was scheduled to go for a surgery two weeks after our interview. Therefore, based on our estimate, nose and throat cancer incidence is probably about 1.3% (1 person out of 79).

We also asked the Bungo villagers to estimate their own risk of getting nose and throat cancer. The average risk from their perspective is 37% (range: 0%-100%). Elsewhere, researchers (Kreuter et al., 2007) have also found that it is difficult to get the public to estimate their risk using numbers, whether in terms of percentages or rank. These were the three risk questions we asked in the questionnaire and the Bungo participants often gave the same answers to Questions 2 and 3.

1. How likely are you to get nose and throat cancer in your lifetime? Please give the percentage. 0% means no chance and 100% means absolute certainty.
2. How likely are you to get nose and throat cancer?
   1, very low; 2, low; 3, somewhat low; 4, medium; 5, somewhat high; 6, high; 7, very high
3. How likely are you to get nose and throat cancer compared with other people your age or compared with your peers?
   1, very low; 2, low; 3, somewhat low; 4, medium; 5, somewhat high; 6, high; 7, very high

The Bungo participants had an average score of 2.68 for Question 2 and a score of 2.57 for Question 3. Both scores were below the mid-point of four. They felt that they have a low risk of getting nose and throat cancer.

In terms of diet, the Bungo villagers take a lot of fresh food. They rear chickens outside their houses (for single-storey houses) or below their houses (for those on stilts). They also grow vegetables. As certain kinds of food like preserved vegetables and salted food have been found to be linked to an increased risk of nose and throat cancer (Armstrong et al., 1985; Henderson et al., 1978; Ho, 1976; Yu et al., 1986, 1989; Yuan et al., 2000), we asked them about their food intake. For preserved food, five of them said that they never take it. But preserved food is in the diet of a majority of the Bungo villagers: 11 eat preserved food every day, 28 once a week, 25 once a month and eight once in a few months. Here, we need to understand the Bidayuh culture. Traditionally the Bidayuh preserve fish using salt and fermented rice, called *pekasam ikan*. The frequency of taking salted eggs is similar: 1 nul, 4 everyday, 34 once a week, 28 once a month, 10 once in a few months. Because they rear chickens and when the hens produce too many eggs, some of the eggs may be salted to make them last longer and for diversity in taste.

As there are findings which show that smoking (Cheng et al., 1999; IARC, 2004) and drinking alcohol (Nam et al., 1992;) lead to nose and throat cancer, we investigated whether the Bungo participants are heavy smokers and drinkers. Only seven are smokers; 20 are non-smokers while 50 said that they had stopped smoking. As for drinking, 36 are non-drinkers, 31 are occasional drinkers, seven are moderate drinkers, and only three are heavy drinkers. Based on the Bungo participants' self-reports, they do not seem to be at risk to nose and throat cancer due to their smoking and drinking habit. Furthermore, some researchers did not link smoking and drinking to nose and throat cancer (Henderson et al., 1976 Shanmugaratnam, 1978).

There is also a genetic risk of cancer. The Bungo participants were worried that they carried a gene that would increase their chance of getting nose and throat cancer. They had a score of 5.21 out of seven, which is above the mid-point of four. In other words, they estimated their risk of getting nose and throat cancer as above average. They were aware that if they have a family history of cancer, their chances of getting nose and throat cancer would be higher. Out of 77 participants, only 7 reported having family members who had nose and throat cancer. Some of the family members may not be from the same bloodline, such as B11 whose husband has nose and throat cancer. She is not at risk of getting the cancer from her husband due to hereditary factors but her children may inherit the genes that make them prone to getting the cancer. The risk of first-degree family member getting nose and throat cancer is 20 times higher compared to a non-family member (Micklem, 2014).

We found that it is taboo to ask about risk of getting nose and throat cancer but this is to be expected. Even in other countries (Banning & Hafeez, 2010; O'Callaghan et al., 2015), people are afraid to talk about cancer and do not want to go for cancer screening. Ting et al. (2018) reported that the Bungo participants avoided the topic of cancer, as if talking about it is tantamount to inviting cancer into their lives.

- *Jangan cari, jaga-jaga takut dapat*.
  [Don't look for it. Be careful, afraid to get it] (B2)

- *Bukan minta, tak semua orang kena. Usia, muda tak ada, berumur yang kena*
  [Not asking for it, not all people get it. Age, the young don't get it, the older get it] (B3)

- *Kalau kawan tanya [tentang kanser suami, saya] jawab. Kalau [saya sendiri] sebut, tak mahu*

  [If asked [about my husband's cancer], I answer. If [I were to initiate] talk about it, I don't want] (B11)

B11's husband fear of cancer was crippling in the sense that it delayed treatment and chance of positive outcomes. B15, another Bungo participant, preferred not to think about it because he already had a tumultuous experience with a brain tumour and survived the surgery which took place five years earlier. He added that if there are no clear signs of nose and throat cancer, it is not important to go for screening to find out. He would rather not think about cancer in order to have a peace of mind.

Severity of nose and throat cancer

The Bungo participants think that nose and throat cancer is a severe disease that poses a serious risk to health. A substantial number also know that nose and throat cancer can cause the patient to lose ability to speak and to have physical deformity. A majority of them know that the cancer causes a lot of pain and can kill in the last stage. Nose and throat cancer appears to be such a serious disease to them that most of them are afraid to think about it. They exhibit the phenomenon of controlling their fear by avoiding the subject matter.

They marginally agreed that they feel uncomfortable when people talk about cancer but they do talk to their friends and relatives about cancer. They are interested to know more about cancer. Hence, when they come across news stories about cancer, they do read the articles. It is probably from these information sources that they know about the severity of nose and throat cancer.

Low possibility of cancer screening to detect nose and throat cancer early

From our interviews, we established that the Bungo participants know that if they go for medical tests and find signs of nose and throat cancer early, their treatment success will be higher. Medical tests include a physical examination by the doctor whereby they feel the neck and throat area for lumps. Medical tests also include blood test, scan and biopsy to confirm whether there are cancerous growths. They agreed that going for medical tests is an act of taking care of themselves – so as to avoid the severe consequences of nose and throat cancer.

The irony is: they know that nose and throat cancer is a severe disease and there is something they can do to detect the cancer early so that chances of survival are higher. They also believe that the medical tests are accurate in detecting cancer. Yet, there are so many barriers that prevent them from taking medical tests. The following are the main reasons, arranged in descending order from the most frequent to the least frequent the least:

- I am at low risk of getting nose and throat cancer;
- I do not know how to go about getting medical tests for nose and throat cancer;
- I am afraid to find out if there is something wrong when I go for medical tests;
- It will take too much of my time to go for medical tests for nose and throat cancer;

- I have never thought about getting medical tests for nose and throat cancer; and
- I am afraid of going for medical tests for nose and throat cancer because I do not understand what will be done.

Their responses show that there are three main reasons why the Bungo participants would not go for cancer screening for nose and throat cancer, namely, (1) no necessity for the tests, (2) fear of knowing that they have the cancer, and (3) lack of knowledge on cancer screening. When they believe that they are at low risk of getting nose and throat cancer, getting nose and throat cancer, it is because they hardly encounter incidence of the cancer in their village and they do not see cancer screening as necessary. There is also the group of people who would rather live in denial and not want to find out whether they have some disease, and this group is also found among the Kuching city folks (Ting et al., 2018). The Bungo participants made it clear that it is not because of cost, transport problems, rude medical personnel, and embarrassment of going for cancer screening that deter them from considering cancer screening. Questions on the cost and logistics problems were included in the questionnaire, knowing that people may come from low income groups. In the case of the Bungo participants, their village is three hours from the Sarawak General Hospital in Kuching where they can go for cancer screening. The district hospitals may not have the facilities.

Confidence to take nose and throat cancer preventive measures

In view of past research findings on the possible causes of nose and throat cancer, we examined the four preventive measures: lifestyle changes involving diet and exercise, avoidance of certain food (e.g., salted and preserved food), cancer screening, and avoidance of environmental pollutants.

A majority of the Bungo participants are the most confident about avoiding food said to cause nose and throat cancer to reduce the risk of getting the cancer. Next, they are also confident about changing to a healthier lifestyle to reduce the cancer risk. A majority said that they were confident that they can go for medical tests for nose and throat cancer but they do not feel as sure about this, compared to lifestyle changes.

Interestingly, they reported that the people who are important to them (for example, family and close friends) also prioritise avoiding food believed to cause nose and throat cancer, more so than avoiding environmental pollutants and changing to a healthier lifestyle. As expected, going for medical tests is the lowest in priority among the cancer preventive measures although they still expressed confidence in taking up cancer screening.

In hindsight, the reports they make of the opinions of people around them are probably reflective of their own views on the relative importance of cancer preventive measures. It seems that since the food information is more definitive (e.g., salted food, preserved food), it may make it easier for the Bungo participants to say they will reduce intake of these types of food. However, changing lifestyle involves dieting (avoiding fatty, salty and fried food) and exercising are more extensive changes, which they may not seriously adopt – although they reported confidence in doing so when asked during the interviews.

In addition to finding out which preventive measure the Bungo participants are confident in adopting to protect themselves from nose and throat cancer, we also investigated their views of how effective these measures are. Among the four preventive measures, the Bungo participants are the most confident in lifestyle changes, followed by medical tests, environmental pollutants, and avoidance of cancer-causing food. It is an irony that the measure that they are most confident of adopting (reducing salted and preserved food) is rated as the least effective among the four preventive

measures. They consider lifestyle changes (diet and exercising) to be the most effective way to reduce their chances of developing nose and throat cancer. They regarded cancer screening as second in effectiveness in cancer prevention. Human behaviour and perceptions are not always consistent, and this is just an example.

Intention to take nose and throat cancer preventive measures

Our interviews with the Bungo participants alerted them to the prevalence of nose and throat cancer in the rest of the Malaysian population. We also asked them whether they had looked for information on the cancer and, if they had not, whether they would do so after our visit. In addition, we also revisited their intention to carry out the four cancer preventive measures to find out whether their confidence in the effectiveness of these measures is linked to intended behaviour.

As to whether they had looked for information on nose and throat cancer, a majority (79.2%) said that they had not, and more than half of them said that they planned to get more information on the cancer in the next six months. The latter is shown by a mean score of 4.65, which is slightly over the mid-point of four in a seven-point Likert scale, indicating there is a balance in the number of participants who said “yes” and “no”. We used a definite time frame in our questioning to get the participants to be committed to their intended behaviour when answering our questions. The main sources of information are the Internet, newspapers, radio, magazines and doctors. This result shows the importance of the mass media (inclusive of the Internet) for the dissemination of information on diseases in order to create public awareness.

A majority of Bungo participants said that they had tried to change to a healthier lifestyle (76.6%). For others, now that they had learnt about nose and throat cancer from us, they felt that they wanted to change to a healthier lifestyle to reduce chances of developing nose and throat cancer, although we also

made it clear that there is no guarantee that this can prevent the cancer incidence. This includes exercising, taking healthier food and avoiding food said to cause nose and throat cancer as well as minimising exposure to environmental pollutants. The score for their intention to change to a healthier lifestyle is high (5.33 out of 7). While people in urban areas have easy access to information technology, people in rural areas rely on the mass media. The role of medical personnel and health leaflets cannot be under-estimated too.

Only 6.5% of the Bungo participants had gone for medical tests for nose and throat cancer (e.g., physical examination, blood test, scan, biopsy). But when asked whether they had intention of going for nose and throat cancer screening in the next six months, we found a strong intention (score of 5.04 out of 7). The test that most are comfortable with is blood test (71 persons), followed by physical examination by a doctor (50 persons). Understandably, scanning (42 persons) and biopsy (32 persons) are less likely to be considered because these cancer detection methods are usually done by people who present with signs of cancer.

Conclusion

In conclusion, the Bungo participants think that nose and throat cancer is a severe disease, one that they do not wish to encounter. They are aware of some of the possible causes of nose and throat cancer: environmental pollutants, lifestyle (food, exercise) and genetic factors. Of these, they are most confident about avoiding food said to cause cancer such as salted food and preserved food. The most effective preventive measure in their perspective is lifestyle changes. Their intention to commit themselves to lifestyle change in the next six months is also the highest, compared to intention to look for more information or go for medical screening. In this respect, it is a positive sign because they feel they can do something to minimise their risk of getting nose and throat cancer. However, the setback is they do not feel that they are at risk of

getting the cancer and mostly do not want to know whether they have the cancer. The perception of low risk often lulls individuals into non-action, believing that they are not at risk. Possibly the Bungo residents do not need to worry because they live relatively healthy lifestyle with a lot of fresh food, and strenuous exercise due to their farming and construction activities. There is also low incidence of nose and throat cancer in the Bungo village we visited.

One lesson we drew from the fieldwork among the Bungo participants is that if we were to embark on creating awareness of nose and throat cancer, it is important to start with the risk. The natural tendency is to flood the public with a barrage of statistical and factual information on nose and throat cancer incidences, and this is what appears in many disease pamphlets produced by health authorities in Malaysia (Ting, Ungau, & Jerome, 2020 in press). Anecdotal accounts and survivor narratives of individuals may have greater persuasive appeal than relying on the logical appeal, and this is a strategy worth consideration in public education efforts to disseminate information on nose and throat cancer risk. There is also a need to educate the public on cancer screening to lessen fear of the unknown so that nose and throat cancer can be detected earlier, thereby increasing chances of good outcomes from the treatment.

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BUNGO RANGE

BIODIVERSITY AND COMMUNITY

This book highlights the significant findings from the Multidisciplinary Expedition in Bungo Range conducted on 5-10 December 2017. The expedition was organized by the Institute of Biodiversity and Environmental Conservation, UNIMAS with support from the Forest Department Sarawak. This volume is illustrated in 24 chapters covering the historical exploration of Bungo Range, a geological feature of the mountain, water resources, aquatic biodiversity, floristics, mammals, birds, reptiles, amphibians, insects, and health and socio-economics of the Tringgus community. It is reported herewith in the book that there are a total of 313 species of plants mainly orchids and zingers, and 298 species of wildlife, among them 105 birds, 39 mammals, 92 insects, 27 reptiles, 17 amphibians, and 59 aquatic lives. Additionally, the use of natural resources by the local community in Tringgus is also presented. This book can serves as a useful reference for the development and management of Bungo Range National Park, and the communities living surrounding the area.

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