

WHO CONSUMES ILLEGAL WILDLIFE?
AN ANALYSIS OF BEAR BILE USAGE IN VIETNAM

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AN ANALYSIS OF BEAR BILE USAGE IN VIETNAM

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ABSTRACT

Vietnam is home to two species of bears: Asiatic Black bear (*Ursus thibetanus*) and Malayan sun bear (*Helarctos malayanus*). Both of these species are under serious threats, mainly from illegal hunting and trade. Bears are hunted from the wild and sold to farms to support the growing bear bile industry in Vietnam. There are currently about 4,000 captive bears in Vietnam, most of which originate from the wild; these bears are often kept in small iron cages and milked for bile on a regular basis. For this study, more than 3,000 of people from three major cities in Vietnam - Hanoi (north), Da Nang (central) and Ho Chi Minh (south) were surveyed to analyze the demographics and motivations of bear bile consumers. Results indicate that 22% of surveyed participants have used bear bile in the past. Hanoi (35%) has a much higher percentage of people using bear bile than both Da Nang (14%) and Ho Chi Minh City (16%). Both men and women consume bear bile, but the percentage of men (29%) using bear bile is much higher than women (17%). Most bear bile consumers (73%) use bear bile to cure specific health problems while only a small percentage (14%) of them use bear bile for entertainment purposes. Women mostly use bear bile to cure specific ailments (88%) while men use bear bile for many different purposes, including entertainment. Survey results indicate that bear bile consumption tends to rise as age increases, with purposes for usage also varying among age groups. During this survey, participants ranked medical alternatives to bear bile as the most effective method to reduce bear bile consumption and phase out bear farming operations in Vietnam.

CHAPTER I

INTRODUCTION

Illegal trade in wildlife has become a global problem over the past few decades, threatening the survival of thousands of species, and affecting biodiversity and essential ecosystems. According to Nijman (2010), more than 35 million animals were traded across international borders between 1998 and 2007, including 400,000 mammals, 1 million birds, and 17.4 million reptiles; most of these originated from the wild. Illicit global wildlife trade is growing and estimated to be worth between \$5 billion-\$20 billion annually (Wyler and Shikh 2008). It is now the second largest illegal trade in the world, ranking only second to illegal drugs (Scheider 2008). Malaysia, Vietnam, Indonesia and China are the major exporters of wildlife, while the European Union and Japan are the most significant importers (Nijman 2009). The illegal trade has pushed many species to the edge of extinction.

Over the past two decades, Vietnam has become an important link in the international wildlife trade network (Newton et al. 2008; Figure 1.1). About 3-4,000 tons of wildlife is illegally traded in and out of Vietnam every year (Nguyen 2008). Wildlife found in the market ranges from small insects to large mammals, from common to critically endangered species that are fully protected under Vietnam's wildlife protection laws such as Indochinese tiger (*Panthera tigris corbetti*), Asiatic black bear (*Ursus thibetanus*), and hawksbill turtle (*Eretmochelys imbricata*; Rao et al. 2005, Corlett 2007,

Zhang et al. 2007, Shepherd and Nijman 2008). Many of these species are listed in the Appendix I and II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES; Yming and Dianmo 1998). Beyond exporting its own wildlife, Vietnamese hunters are also found in neighboring countries' forests, such as Laos (Nooren and Charigde 2001, Corlett 2007). At the global scale, Vietnam is an important "middle man" in this illegal business. Lots of wildlife from Laos,



Figure 1.1. Tigers confiscated by environmental police in Hanoi, January 2008. Photo: ENV

Cambodia, Myanmar and other countries is imported into Vietnam; some is consumed by Vietnamese, but the rest is shipped to China.

Illegal wildlife trade has many complex causes that are rooted in social, economic, cultural, and political structures (World Bank 2005). Most prior studies on wildlife trade have focused on describing hunting and trade at the local level. For example in Vietnam, there are a number of surveys of wildlife hunting and trade in communities surrounding parks and nature reserves. Johnson et al. (2003) carried out a study on wildlife hunting and use in Nam Ha National Protected area in Laos. The authors identified animal species hunted by local villagers, hunting seasons and methods, values of wildlife and market price for different species. In the same year, the Protected Areas for Resource Conservation project evaluated the wildlife trade situation in Na

Hang District, Tuyen Quang Province, Vietnam. This work also focused on identifying the animal species that were hunted and traded by local communities, values of wildlife and local market price for each species. While useful, these types of studies fail to identify the underlying factors that drive wildlife trade. One study that did approach social dimensions of the problem in Vietnam is the Wildlife Trade Monitoring Network (TRAFFIC) survey (2007), which analyzed wildlife product consumption in Hanoi. The survey focused on identifying wildlife consumers' jobs, incomes and awareness of wildlife protection laws. The study's author estimated that 47% of Hanoi residents have used products made from wildlife, including specific groups such as entrepreneurs and government officials. The author also says that men use more wildlife products than women and people with higher income and education consume more wildlife than those with lower income and education levels (TRAFFIC 2007). Wildlife consumption is also shown to often be done as a social activity. However, the analysis presented in the report is not conclusive in describing the major characteristics, purposes and motivations of wildlife consumers in Hanoi. As it is limited to Hanoi, which is very unique from other parts of the country, the survey did not provide a picture of wildlife consumption at the national level.

Because basic information about the sources of demand for illegal wildlife is lacking, it is difficult to design appropriate and effective measures to tackle the root problems. This thesis aimed to examine the social and geographic profiles of illegal wildlife consumers in more detail than has been previously attempted. By looking at the specific instance of bear bile consumption in Vietnam, it is anticipated that a clearer

perspective on the motivations of consumers will arise, which may in turn allow for better ways to approach the broader problem.

Illegal Bear Farming in Vietnam

A recent trend in wildlife trade that has developed rapidly in Vietnam and other parts of Asia is the farming of endangered species. The advantage of bear farming over hunting is that bear farmers can extract bile from the same bear on a monthly basis. Bear farming has attracted many people from countries like China, Korea, Japan and Vietnam. There are more than 7,500 bears in captivity in China (Earth Island Institute 1997) and 4,000 bears in Vietnam, accounting for almost 10% of the estimated total population of Asiatic black bears in the world (WSPA 2002).

Two species of bear are native to Vietnam, Asiatic black bear (*Ursus thibetanus*) and the Malayan sun bear (*Helarctos malayanus*). The Asiatic black bear can be found widely throughout Asia, from Pakistan to Malaysia, Siberia, and the south of China. The sun bear is about half the size of the Asiatic black bear, and can be found in just southeast Asia (Francis 2001). Both of these species are currently listed as “vulnerable” in the World Conservation Union’s Red List (IUCN 2010). In Vietnam, little is known about these species in the wild. Some scientists believe that Vietnam’s wild bear populations have declined sharply, largely driven by the lucrative trade in bear parts (particularly gall bladders) for use in traditional Chinese medicine (Servheen 1996; Shepherd 2001; Ellis 2005; Corlett 2007). Most captive bears in Vietnam come from the wild, and most of them are Asiatic black bears as they are much larger in size and produce more bile than the Malayan sun bear.

Bear bile has been used in traditional Chinese medicines for over 3,000 years (WSPA 2002). It has been used to treat a variety of health problems such as liver disease, burns, fever, internal bleeding, stomach ulcers and more (Mills 1992). It has subsequently been adopted by Korea, Japan, Vietnam and other countries in the region. The Asiatic black bear is said to be the most valued bear species for use in traditional medicines (Serheen 2001; Shepherd and Nijman 2008). Today, many Vietnamese people still believe that bear bile is a magical traditional medicine, curing many different health problems, ranging from bruising, stomachaches, and digestion



Figure 1.2. People waiting to buy bear bile at a bear farm in northern Vietnam. Photo: ENV

to serious illness such as cancer. This belief is a result of the influence of Chinese culture as China dominated Vietnam from 179 BC until 938 (Nguyen 2006).

Vietnam is culturally divided into three regions: the north (Red River delta), central, and south (Mekong River delta). Chinese culture has seen the strongest influence over the northern region as it originally made up the country of Vietnam during China's invasion. Chinese and Vietnamese people believe that whatever part of an animal is eaten it will help make the same part of a human's body strong. For example, if one eats a chicken leg, it will help make their legs stronger and run faster. Chinese and Vietnamese people particularly value wildlife meat and its products, as they believe that

consuming wildlife will give them the same strength that wildlife has in the wild, especially powerful animals like tigers and bears.

Until about 30 years ago, the main source for bear gall bladder and body parts was the hunting and killing of wild bears (Li 2004). Still today, Mano and Ishii (2008) estimate that about 2,000 bears are killed in Japan every year for bear parts and gallbladders. The gallbladder is often dried and sold in traditional medicine shops (Feng et al. 2009). However in the early 1980s, North Koreans developed a new technique for extracting bile from live bears (WSPA 2002). This meant that bear bile could be produced and extracted many times from a single live bear. The technique soon spread throughout the region, including China and Vietnam. As a result, today bears are often captured alive and sold to bear farms for what has become a new and highly profitable business in Asia.

In the early stages of the development of bear bile extraction techniques in Vietnam, bears were cut open every time the owners wanted to collect bile. This technique, however, was a long and complicated process. It took a long time for a bear to recover from the surgery before it could be cut open again for bile extraction. As a result, farmers later internally sewed the gall bladder to the bear's body and marked the area externally, so that they could collect bile without operating on the bear. By doing so, bear owners could collect bile more frequently as it did not take a bear as long to recover as in the surgery technique. Today, modern equipment like ultra-sound systems make bear farming even more profitable as bear bile extraction becomes a much simpler job and owners can extract bile as frequently as on a monthly basis.

In Vietnam, both species of bear are protected under group IB of Decree 32/2006CP-ND, the Government's main wildlife protection law. This means bears are fully protected and it is illegal to hunt, kill, transport, buy or sell them for commercial or other purposes. It is also illegal to consume bear bile and bear products. Moreover, the Ministry of Agriculture and Rural Development issued Decision 02/2005 specifically dealing with the management of captive bears (Forest Protection Department 2005). According to this regulation, all captive bears must be registered as of the end of February 2005. Any bears discovered by authorities after the deadline of the registration were to be confiscated. This regulation aims to manage all the current captive bears and prevent new wild bears coming into farms. In addition, both the Asiatic black bear and Malayan sun bear are listed under Appendix I of CITES, of which Vietnam has been a member since 1994. This means both import and export permits are required for transporting these two bear species across national borders. However in reality, bear crimes are not considered serious offenses by authorities. The punishment levels are usually limited to administrative fines with no confiscation of crime evidence (i.e., bears). For example in 2007, 80 illegal (non-registered) bears were discovered by authorities in six bear farms in Quang Ninh province but the owners of these farms had to pay only administrative fines and they were then granted permission to keep these bears (Nguyen 2009). This punishment was not strong enough to protect bears or set a precedent for other existing and potential bear crime violators. In fact, bear farming does not seem to be affected at all by the old existing and new government laws and regulations.

Bear farming operations vary in size, from one to a hundred bears. Some major bear farm owners often host organized tours with visitors coming to the farm and observing the bile extraction process before paying for their bile (Nguyen 2009). Vietnamese people used to pay US \$10/cc of bear bile but the price has dropped significantly to \$1-2/cc over the past few years due to its greater availability. Responding to this potential business crisis, many bear owners have been looking into the international market. In particular, there are new “bear tours” businesses that have been set up at the most popular tourist destination in Vietnam, Ha Long Bay, a UNESCO



Figure 1.3. An Asiatic black bear at a farm in Hanoi. Photo: ENV

world’s natural heritage site serving mainly Korean and Chinese tourists. These illegal businesses are extremely well organized and somehow seem untouchable by authorities.

Due to the lack of law enforcement, a more successful approach to the protection of Vietnam’s bears may be the reduction or elimination of bear bile consumption by the public. A major hurdle to this approach is that bear bile has long been commonly used in Vietnam and its use is socially acceptable. However, there is little understanding of what specific factors motivate people to use bear bile in Vietnam, making it very difficult for authorities and conservation organizations to develop effective measures to target

strategies for reducing consumer demand as a means to phase out bear farming and protect the remaining populations of Vietnam's bears.

This thesis is unique because it is the first study, to the author's knowledge, to focus on the demographics and geography of the consumption of endangered wildlife products. Groups in Vietnam concerned about illegal wildlife trade (such as Education for Nature -Vietnam, ENV) hope to be able to direct efforts like public information campaigns where they will have the greatest impact. General expectations among conservation organizations is that the target consumers of bear bile might be characterized as middle-aged men (30-50 years old) who use wildlife products for entertainment purposes, as this is trendy among young career-successful individuals. Consuming something special and out of the ordinary, such as wildlife products, is a way for these individuals to show off their success. However, there are also thought to be major differences in bear bile consumption between the north, central and the south of Vietnam due to different levels of influence of Chinese culture in these different regions.

The findings of this research will test these presumptions, and provide local authorities and organizations with a more detailed profile of domestic bear bile consumers and their motivations. This may help them to improve current public policies, develop better public awareness campaigns and strengthen law enforcement. Findings from this research may also provide a broader picture of the social causes for endangered wildlife trade, particularly for comparable species, such as tigers – for which there has been a similar boom in commercial farming in Vietnam.

CHAPTER II

RESEARCH METHODS

Survey methods and variables

A survey designed to collect information about the demographic characteristics and motivations of bear bile use in Vietnam was carried out in mid-2009 in three major cities: Hanoi, Da Nang and Ho Chi Minh City, representing north, central and south Vietnam (Figure 2.1). A questionnaire was developed that was comprised of 19 questions (see appendix). The first four questions were for both bear bile and non-bear bile users. These questions were aimed at establishing the profile of interviewees such as their residence, age, level of education, and separating bear bile users from non-users. Use of bear bile, though technically illegal, it is socially acceptable in Vietnam. In other words, using bear bile is not widely considered a crime among Vietnamese, so people were not embarrassed to talk about their bear bile usage.



Figure 2.1. Surveyed Areas Map
Basemap: Vietnam ANZ Travel

In addition, the survey contained 11 questions for people who have used bear bile in the past. These questions aimed to find out the users' perceived values of bear bile, their purposes in using bear bile, the sources, frequency, and intention regarding future use of bear bile, as well as their opinions about reducing bear bile consumption in Vietnam. Bear bile users were subdivided into two groups: past and current bear bile users. The term "Past users" here refers to people who used bear bile at any time in the past but stopped using bear bile in the past two years. "Current bear bile users" are considered those who used bear bile at least once over the past two years. This is the most concerning group of consumers as they have direct influence on the existence and development of bear farming operations in Vietnam.

The last five questions focused on non-bear bile consumers. This section aimed to understand respondents' reasons for not using bear bile, their understanding of the law, as well as their opinions on reducing the consumption of bear bile or phasing out bear farming operations in Vietnam. The survey was pre-tested in Hanoi and further changes were made before the actual survey was carried out.

Interviews were carried out by employees of ENV that were trained in survey methods and interviewing skills, and who practiced these through the survey pre-test in Hanoi. Approximately 9,000 home telephone numbers were randomly selected and given to ENV by the Vietnam Multimedia Cooperation (VTC). More than 3,000 people of 18 years of age and over were anonymously reached and interviewed via telephone at different times of the day (morning, afternoon, evening and the weekend) to ensure that the survey would reach a wide range of people from different classes and professions of

society. The participation of the survey interviewees was totally voluntary and they had the right to withdraw from the survey anytime during the research. Each person was interviewed once and each interview lasted from 15 to 25 minutes. When asking about age, ENV staff asked about the year the interviewees were born instead of how old they were in order to avoid the confusion, as many Vietnamese would add one more year to their actual age.

The survey did not include jobs and income variables because ENV felt that it was difficult to obtain truthful information about these variables. Besides personal pride issues (if respondents don't have jobs or high incomes), Vietnamese people have not developed a habit of keeping track of their income, especially for people whose incomes come from a variety of different sources.

This survey was submitted to the University of Missouri Campus Institutional Research Board in January 2010 and was classified as exempt from review.

Data management and analysis

As part of the analysis process, participants are divided into five age groups: 20s (18- 29), 30s (30-39), 40s (40-49), 50s (50-59) and 60 and older. This division is based on the assumption of similarities in health condition, incomes and social status across age group. For example, people in their 20s tend to have the least health problems and probably low incomes as they are at the beginning of their careers. In contrast, people in their 60s and older are likely to have more health problems and to be retired. Meanwhile

people in their 40s and 50s are probably at the peak of their career, still in good health condition, and likely to have more disposable income.

Current bear bile users are divided into four different groups based on the frequency of usage. All the people who used bear bile once over the past two years were considered minor users. If they used bear bile two to five times they were considered small users. If they used it between six to 15 times, they were considered moderate users. If they used bear bile more than 15 times in total, they were considered major bear bile users.

To analyze the potential relationships between education and the consumption of bear bile, participants were divided into two groups: basic education and advanced education levels. The basic education group included all the interviewees who claimed to have studied no further than high school. The advanced education level included the interviewees who claimed to have pursued further education, such as undergraduate or post-graduate studies or those who had attended vocational schools.

Additional information was collected from respondents thought to be potentially related to the use of bear bile, including gender, perceived medical values of bear bile, purposes for using bear bile, awareness of associated laws, and attitudes toward animal welfare, since they might have witnessed the bear bile extraction process or seen bears kept in captivity. Results were also analyzed geographically by comparing responses between the three surveyed cities of Hanoi, Da Nang and Ho Chi Minh City.

During the analysis process, three binary regression models were generated. The first model tested for the statistical significance of the demographic variables (e.g., education, gender, age and geography) in predicting bear bile consumption. The second and third models tested whether demographic variables could predict the use of bear bile for general health improvement and entertainment purposes, helping to identify the typical profile of this type of consumer. The logistic regression models were used to specify explanatory variables.

Limitations of the survey

The survey could not profile the participants' areas of profession or their annual income because many people did not feel comfortable talking about these matters. The survey did not reach people without house phones who use cell phones as their primary contact. The surveys were only carried out in three major cities of the country so it might not fully represent the consumption of wildlife, particularly for rural and remote areas. The analysis of this study is based on stated responses of the interviewees. Some responses might not reflect participants' actual practices as they could be influenced by certain motivations during the interview. For example, some people might be a bear bile user but they were worried about telling the truth to surveyors via the phone as they were worried about potential consequences.

CHAPTER III

RESULTS

Demographics of bear bile consumption

Sample characteristics

More than 3,000 people from three major cities - Hanoi, Da Nang and Ho Chi Minh - were reached via house phones and voluntarily participated in the survey during 2009. Of these, 3,032 interviews are considered valid with all the questions being completed. In all three cities, more women (1,871) participated in the survey than men (1,161), women being the respondents who answered the phone when ENV staff called. Hanoi has the highest percentage (39.9%) and Ho Chi Minh has the lowest percentage (36.9%) of male participants in the survey (Table 1).

Table 1. Geographic and gender distribution of survey participants who fully completed survey.

Location	Male	Female	Total
Hanoi	405	611	1,016
Da Nang	383	622	1,005
Ho Chi Minh	373	638	1,011
Total	1,161	1,871	3,032

All survey participants claimed to be at least 18 years of age and older. Due to the random sampling method, the distribution of age is not the same among different age groups. People in their 20s represent the largest group participating in the survey with 852 people (28.1%), followed by those in their 40s (22.9%). The smallest participating age group was in their 60s or older, with only 381 people taking part (12.6%; Table 2).

The survey participants are divided into two groups based on their education levels. More than half (59.8%) of the total participants claimed they have only finished high school or lower. Almost half of male participants (48.1%) had achieved an advanced education level while a majority of female participants (64.7%) had attained just a basic education level (Table 3). The percentage of the advanced education levels in this survey is much higher than the general population in Vietnam. According to Tran (2009), only 13.4% of the total population of 15 years of age and older in Vietnam have gained advanced education levels.

Table 2. Age group distribution of survey participants.

Age group	Male	Female	Total	
			n	%
18-29 (20s)	314	538	852	28.1
30-39 (30s)	196	407	603	19.9
40-49 (40s)	280	413	693	22.9
50-59 (50s)	203	300	503	16.6
≥60 (≥60s)	168	213	381	12.6
Total	1,161	1,871	3,032	100.0

Table 3. Education levels of survey participants

Education	Male	Female	Total	
			n	%
Basic levels	602	1,211	1,813	59.8
Advanced levels	559	660	1,219	40.2
Total	1,161	1,871	3,032	100.0

Only 655 out of 3,032 interviewees (21.6%) indicated that they had used bear bile in the past; 399 of these used bear bile during the past two years (11.2% overall; Table 4). In addition, 7.7% of survey participants who had never used bear bile in the past claimed they will definitely use bear bile in the future, and 21.4% of them said that they were not sure if they would. A large number, roughly half of the survey participants (1,497) have never used bear bile in the past and said that they would not use bear bile in the future (Table 4).

Table 4. History of bear bile usage by interviewees

Main groups	Sub-groups	Sub-total (n)	%	n
Bear bile users	Current users	399	11.2	655
	Past users	256	8.4	
Non-bear bile users	Non-future users	1,497	49.4	2,377
	Future users	232	7.7	
	Unknown	648	21.4	

Demographics of the bear bile users

Survey results indicate that more men use bear bile than women. Out of 1,161 men, 335 (28.9%) reported using bear bile in the past and 90 (7.8%) said that they will use bear bile in the future. Meanwhile, 320 out of 1,871 (17.1%) female respondents said that they have used bear bile in the past, and 142 (8.0%) said that they will use bear bile in the future. The advanced education group has a higher percentage of bear bile users than the basic education group. Survey results show that 27.5% of the people who have advanced education have used bear bile in the past and 7.7% are potential future users. Out of 1,813 respondents with basic education levels, 17.7% stated that they have used bear bile in the past and 7.6% claimed that they will use bear bile in the future (Table 5).

There is a difference in bear bile usage between the three cities sampled. People from Hanoi, the north, are more frequent bear bile users than those in Da Nang and Ho Chi Minh City. The survey reveals that 44.4% of respondents in Hanoi either have used bear bile in the past or will use bear bile in the future. In contrast, 23.2% of respondents in Da Nang and 20% in Ho Chi Minh have used bear bile in the past or expect to be future bear bile users (Table 5).

Table 5. Basic demographics of bear bile users

Bear bile users	Total	Gender		Education		Location		
		M	F	Ba	Adv	Hanoi	Da Nang	HCM
Past users	256	121	135	128	128	123	74	59
Current users	399	214	185	193	206	229	72	98
Future users	232	90	142	138	94	99	87	46
Total	887	425	462	459	428	451	233	203

Regression model of demographic factors

Because the random survey method did not yield uniform sized demographic subgroups, regression models were run to test for statistical significance of the different demographic relationships. Since all of the P-values (except Da Nang) in the regression model are less than 0.001, the model suggests there are significant relationships between bear bile consumption and demographic factors including age, gender, education and geography. Age and geographic location are particularly important factors explaining the decision of Vietnamese people to consume bear bile. The role of age is strongest (controlling for all other factors such as gender, education and geography): older groups use bear bile more commonly than people in their 20s. In particular, people over 59 years of age are 2.8 times more likely to use bear bile than those in their 20s. Living in Hanoi also has a very high probability associated with bear bile use compared to Ho Chi Minh City or Da Nang. People in Hanoi are 2.6 times more likely to use bear bile than those in Da Nang but there is not much difference between Da Nang and Ho Chi Minh City (Table 6).

Gender and education are also very influential. When controlling for other factors to test for the significance of gender, the model shows that men are 1.8 times more likely to use bear bile than women. When education is tested, the model indicates that people with advanced education have a 1.7 x greater probability of consuming bear bile than those with basic education levels (Table 6).

Motivations of non-bear bile users

A large number of interviewees (78.4%) claimed that they have never used bear bile in the past (82.9% of females and 71.1% of males). Many of them also claimed that they will continue to not use bear bile in the future (male: 63.4%, female: 62.9%). A majority of these respondents are from Da Nang (772 people). In addition, the survey results show that only a small number of bear bile users (85 people) will discontinue using bear bile in the future, and half of them are from Hanoi (Table 7).

Table 6. Results from Logistic Regression model of Bear Bile Consumption in Vietnam. The odds ratios (Exp(B)) indicate the statistical likelihood of bear bile consumption by a variable relative to a reference group. In this case, the reference variables are Female, Basic education, Age of 20s, and Ho Chi Minh City. As an example, Age of 30s is 2.048* more likely to use bear bile than Age of 20s; Age of 40s is 1.711* more likely.

Factors	B	S.E.	Wald	df	Sig.	Exp(B)
Male	.610	.094	42.113	1	.001	1.841
Advanced Education	.547	.097	31.594	1	.001	1.728
Age of 30s	.717	.144	24.876	1	.001	2.048
Age of 40s	.537	.145	13.700	1	.001	1.711
Age of 50s	.817	.148	30.371	1	.001	2.265
Age of ≥ 60	1.041	.155	45.027	1	.001	2.831
Hanoi	.946	.112	70.872	1	.001	2.576
Da Nang	-.135	.127	1.124	1	.289	.874
Constant	-2.696	.144	352.058	1	.001	.067

P-value ≤ 0.05

The non-bear bile user group is made up of 82.3% of interviewees who claimed to finish high school or lower, and 72.6% of participants with advanced education levels. A large number of both basic (52.1%) and advanced (45.3%) education level groups stated that they will continue not to use bear bile in the future (Table 7).

Respondents have not used bear bile for many different reasons. The primary reason cited in the survey is that they have never needed it; a majority of those in Hanoi (60.1%) cited this reason. The second most important reason was that many respondents were not aware of its supposed values (21.6%), especially in Ho Chi Minh City (29.6%). Interestingly, no one in Hanoi claimed to be unaware of these values (Table 8).

Legality and welfare issues regarding bears seemed to have very little influence in people's choice not to use bear bile. Only 30 people claimed they have never used bear bile because it is illegal and just 56 people claimed it was because they were concerned about the bears (Table 8).

Table 7. Basic demographics of non-bear bile users

Non-bear bile users	Gender		Education		Location		
	M	F	Ba	Adv	Hanoi	Da Nang	HCM
Non-users in the past	826	1,551	1,492	885	664	859	854
Never have and will not use bear bile (All time non-users)	42	43	39	46	43	20	22
Current and future non-bear bile users	521	976	945	522	304	772	421

Ba: Basic level. Adv: Advanced level

Table 8. Reasons that non-bear bile users cite for not using it.

Reason	Hanoi		Da Nang		Ho Chi Minh		Total	
	n	%	n	%	n	%	n	%
Have never needed	399	60.1	344	40.1	410	48.0	1,153	48.5
Do not know its values	0	0.0	261	20.4	253	29.6	514	21.6
Too expensive	78	11.8	91	10.6	99	11.6	268	11.3
Ineffective	42	6.3	9	1.1	10	1.2	61	2.6
Concerned about bears	19	2.9	18	2.1	19	2.2	56	2.4
Illegal	11	1.7	13	1.5	6	0.7	30	1.3
Others	115	17.3	123	14.3	57	6.7	295	12.4

When asked “is the use of bear bile illegal?,” most non-bear bile users (74.3%) in all three cities thought that it was not, especially in Ho Chi Minh City (75.3%). This indicated that existing laws are little known and have little impact on people’s decisions regarding the consumption of bear bile in Vietnam (Table 9).

Table 9: Responses to the legality of bear bile usage by non-users.

Is the use of bear bile illegal?	Hanoi		Da Nang		Ho Chi Minh		Total	
	n	%	n	%	n	%	n	%
Yes	191	28.8	209	23.0	211	24.7	611	25.7
No	473	71.2	650	71.5	643	75.3	1,766	74.3

When asked to rank a list of measures for potentially eliminating the use of bear bile and bear farming operations in Vietnam in the order of their likely effectiveness, non-bear bile users group ranked “Alternative health options” as the most effective measure (31.2%), especially in Da Nang with more than 300 people (35.4%). The second highest rated measure is “raising awareness of the public” (28.4%), followed by “forced closure of bear-farming operations” (26.2%). Law and enforcement was considered the least effective (13.3%) alongside several other suggestions (Table 10).

Table 10: Responses to potential effectiveness of measures to reduce bear bile usage and bear farming in Vietnam by non-users.

Measures	Hanoi		Da Nang		Ho Chi Minh		Total	
	n	%	n	%	n	%	n	%
Alternatives	188	28.3	304	35.4	250	29.3	742	31.2
Greater Awareness	188	28.3	247	28.8	230	26.9	674	28.4
Closing down bear farm operations	152	22.9	223	26.0	261	30.6	636	26.8
Law and enforcement	109	16.4	85	9.9	104	12.2	298	12.5
Others	18	2.7	0	0	9	1.1	27	1.1

Characteristics and motivations of bear bile users

Similar to the results shown in Table 6, there is a major difference in the use of bear bile between men and women. Men in general are much more likely to use bear bile than women in all three cities (men: 28.9%, women: 17.1%), especially in Hanoi, where 42.0% of interviewed men indicated that they have used bear bile in the past.

Meanwhile, only 20.1% of men in Da Nang and 23.6% of men in Ho Chi Minh reported using bear bile before. Hanoi women are also more likely to use bear bile than men and women in Da Nang and Ho Chi Minh City. Almost 30% of Hanoi women indicated that they had used bear bile in the past while only 11.1% of those in Da Nang and 10.8% of those in Ho Chi Minh were bear bile users (Table 11).

In general, bear bile use rises with age, a trend that can be seen in all three cities. The youngest group (20s) is the smallest bear bile consumer group, with only 14.7% using bear bile. The highest percentage of young consumers is in Hanoi (24.4%). People in their 30s use bear bile (23.1%) more than the 20s and 40s age groups. People in their

Table 11. Distribution of bear bile users by gender and geography

Gender	Hanoi		Da Nang		Ho Chi Minh		Total	
	n	%	n	%	n	%	n	%
Male	170	42.0	77	20.1	88	23.6	335	28.9
Female	182	29.8	69	11.1	69	10.8	320	17.1
Total	352	34.7	146	14.5	157	15.5	655	21.6

60s or older had the highest percentage of bear bile users (32.3%) while people in their 50s were the second largest bear bile user group (26.4%), except in Ho Chi Minh City where the percentage of bear bile users in their 30s and 50s are similar at more than 18% (Table 12).

The survey revealed that the advanced education group has a higher percentage of bear bile users than the basic one, and this trend is similar in all three cities. Overall, 321 out of 1,813 (17.7%) people with basic education levels had used bear bile in the past. Three hundred and thirty four out of 1,219 people (27.4%) with advanced education had used bear bile. In Ho Chi Minh City, the difference between basic and advanced education levels is slightly larger (basic education: 12.6%, advanced: 27.4%) than in Hanoi and Da Nang (Table 13).

Table 12. Distribution of bear bile users by age and geography

Age group	Hanoi		Da Nang		Ho Chi Minh		Total	
	n	%	n	%	n	%	n	%
≤20s	63	24.4	30	10.7	32	10.2	125	14.7
30s	73	36.8	29	14.1	37	18.9	139	23.1
40s	63	31.2	36	14.8	35	14.2	134	19.3
50s	80	41.2	26	16.1	27	18.2	133	26.4
≥60s	72	44.7	25	22.1	26	24.3	123	32.3

Table 13. Distribution of bear bile users by education and geography

Education	Hanoi		Da Nang		Ho Chi Minh		Total	
	n	%	n	%	n	%	n	%
Basic	163	30.6	74	12.1	84	12.6	321	17.7
Advanced	189	39.1	72	18.4	73	21.2	334	27.4
Total users	352	34.6	146	14.5	157	15.5	655	21.6

A large number of bear bile users (66.9%) believe that bear bile is useful for sprains, bruising and muscle complaints, and 40.2% of bear bile users think that bear bile is good for general health improvement. Only a small number of users believe that bear bile can cure cancer (7.2%) or indigestion (6.3%). A few people (10) from Da Nang believe bear bile can be used as eye drops but no respondents from Ho Chi Minh City or Hanoi thought bear bile had such value. Another small group of users (11.2%) believe that bear bile has additional health values. Only 33 (5.1%) bear bile users believe that bear bile has no health benefits (Table 14).

Hanoi has the highest percentage of bear bile users who believe bear bile is useful for sprains, bruising and muscle complaints, general health improvement and cancer while Da Nang has the highest percentage of respondents who believe that bear bile can be used as eye drops and cure arthritis. Da Nang also has the highest percentage of bear bile users who believe bear bile does not have any health benefits (Table 14).

Table 14. Perceived medical values of bear bile.

Values	Hanoi		Da Nang		Ho Chi Minh		Total	
	n	%	n	%	n	%	n	%
Sprain, bruising and muscle complaints	251	71.3	96	65.8	92	58.0	438	66.9
General health improvement	166	47.2	35	24.0	62	39.5	263	40.2
Arthritis	64	18.2	35	24.0	35	22.3	134	20.5
Cancer	38	10.8	2	1.4	7	4.5	47	7.2
Indigestion	35	9.9	5	3.4	10	6.4	41	6.3
Eye-drops	0	0	10	6.8	0	0	10	1.5
Others	29	8.2	15	10.3	10	6.4	73	11.2
Bear bile has no value	11	3.1	10	6.8	21	13.4	33	5.1

Note: Totals may not add to 100% as a surveyed participant could have provided more than one medical values.

Most bear bile users intend to cure a specific health problem such as muscle complaints, bruising, liver or stomach problems (72.5%), while others 40.2% use it for more general health improvement. Only a small number of users (13.7%) said they did so for entertainment purposes. Usage in Da Nang tends to focus on treating specific ailments (80.1%) with a small number (8.9%) seeking general health improvement. In contrast, Ho Chi Minh City has the greatest percentage of people using bear bile for general health improvement (31.2%) and entertainment (17.2%). Hanoi has fairly high percentages of people using bear bile for both specific health treatment (73.9%) and general health improvement (26.7%) but the lowest percentage of people using it for entertainment (11.4%, Table 15).

Table 15. Intended purposes of bear bile usage by geography

Purpose	Hanoi		Da Nang		Ho Chi Minh		Total	
	n	%	n	%	n	%	n	%
General health improvement	94	26.7	13	8.9	49	31.2	156	23.8
Specific medical treatment	260	73.9	117	80.1	98	62.4	475	72.5
Entertainment	40	11.4	23	15.8	27	17.2	90	13.7

Men and women responded very differently in their purposes for using bear bile. Most women (88.1%) use bear bile to treat specific health problems and only a few of them (2.5%) use bear bile for entertainment. Meanwhile, only about half (56%) of male consumers use bear bile for specific health treatment but nearly one-fourth (24.5%) use bear bile for entertainment. Another one-quarter of men use bear bile for general health improvement with a small number of women (14.7%) doing so (Table 16).

Table 16. Distribution of bear bile usage by gender.

Purpose	Male		Female		Total	
	n	%	n	%	n	%
General health improvement	109	25.5	47	14.7	156	23.8
Specific medical treatment	193	57.6	282	88.1	475	72.5
Entertainment	82	24.5	8	2.5	90	13.7

Note: Totals may not add to 100% as a surveyed participant could have provided more than one medical values.

In general, education does not appear to be related to the primary purposes for which bear bile is used among the consumers. The percentages for specific treatment and general health improvement are consistent between the two groups. However, there is a difference in the use of bear bile for entertainment purposes, with higher rates among people with advanced education (Table 17).

Reasons for bear bile use are quite similar amongst different age groups and geographic locations. Responses indicate that most people from all age ranges use bear bile to treat a specific health problem, ranging from 63.4% to 83.2%, especially the youngest group in all three cities and the oldest group in Da Nang (96.0%). Many bear bile users have also used bear bile to improve their general health condition. This is most common among older groups (40s: 29.9%, 50s: 29.3%, 60s: 29.3%). In contrast, young people use it the least for this purpose. Of the small number of bear bile users using for entertainment purposes, the largest percentage is mostly made up by middle-aged people, between their 30s and 50s. The youngest (9.6%) and the oldest (7.3%) groups used bear bile least for entertainment (Table 18).

Table 17. Distribution of bear bile usage by education level.

Purpose	Ba		Adv		Total	
	n	%	n	%	n	%
General health improvement	74	23.1	82	24.6	156	23.8
Specific medical treatment	240	74.8	235	70.4	475	72.5
Entertainment	36	11.2	54	16.2	90	13.7

Note: Totals may not add to 100% as a surveyed participant could have provided more than one medical values. Ba: Basic education level. Adv: Advanced education level

Table 18. Distribution of users purposes for bear bile by age.

Age	City	General health improvement		Specific medical treatment		Entertainment	
		n	%	n	%	n	%
20s	Hanoi	5	7.9	58	92.1	3	4.8
	Da Nang	4	13.3	25	83.3	4	13.3
	Ho Chi Minh	8	25.0	21	65.6	5	15.6
	Total	17	13.6	104	83.2	12	9.6
30s	Hanoi	16	21.6	55	74.3	11	14.9
	Da Nang	2	6.9	23	79.3	5	17.2
	Ho Chi Minh	6	16.2	26	70.3	7	18.9
	Total	24	17.3	104	74.8	23	16.5
40s	Hanoi	19	30.2	42	66.7	10	15.9
	Da Nang	3	8.3	26	72.2	9	25.0
	Ho Chi Minh	18	51.4	17	48.6	6	17.1
	Total	40	29.9	69	51.5	25	18.7
50s	Hanoi	28	35.0	53	66.3	10	12.5
	Da Nang	3	11.5	19	73.1	4	15.4
	Ho Chi Minh	8	29.6	11	40.7	7	25.9
	Total	41	30.8	83	62.4	21	15.8
≥60s	Hanoi	26	36.1	52	72.2	6	8.3
	Da Nang	1	4.0	24	96.0	1	4.0
	Ho Chi Minh	9	34.6	18	69.2	2	7.7
	Total	36	29.3	94	76.4	9	7.3

Additional statistical logistic regression models were run to test users' motivations for bear bile consumption. Table 19 shows the results, examining the relationship between people who use bear bile for entertainment purposes to demographic characteristics. The results indicate that men have a much higher probability (12 times) of using bear bile for entertainment purposes than women. Age is also significant in discriminating among users: middle-aged people (between 30s and 50s) are twice as likely to use bear bile for entertainment than those in their 20s or seniors (≥ 60 years of age). Geographically, though Hanoi has the highest percentage of bear bile users, people in Da Nang and Ho Chi Minh are somewhat more likely (1.4 times) to use bear bile for entertainment (Table 19).

Table 19: Logistic regression model of factors that influence the use of bear bile for entertainment purposes.

Factors	Coefficient (B)	S.E.	Wald	df	Sig.	Exp(B)
Male	2.487	0.383	42.235	1	.001	12.025
Advanced Education	0.373	0.256	2.116	1	0.146	1.452
Age of 30s	0.650	0.405	2.581	1	0.108	1.915
Age of 40s	0.764	0.407	3.519	1	0.061	2.147
Age of 50s	0.698	0.413	2.861	1	0.091	2.010
Age of ≥ 60	-0.337	0.480	.491	1	0.483	0.714
Ho Chi Minh	0.356	0.293	1.483	1	0.223	1.428
Da Nang	0.323	0.306	1.117	1	0.290	1.381
Constant	-4.439	.516	73.973	1	.001	.012

P-value ≤ 0.05 ; reference group is same as Table 6

Geography is the strongest correlate with people’s decision to use bear bile for general health improvement. Users in Ho Chi Minh City are 5 times more likely to do so than those in Da Nang; users in Hanoi are 4.1 times more likely to use bear bile for health improvement than those in Da Nang. The role of gender is also significant: men are almost 3 times more likely than women to use it for general health improvement. Moreover, a user who is older than 39 is 3 times more likely to use it than a younger one (Table 20).

Table 20. Logistic regression model of factors that influence the use of bear bile for general health improvement.

Factors	Coefficient (B)	S.E.	Wald	Df	Sig.	Exp(B)
Male	1.065	0.206	26.647	1	0.001	2.900
Advanced Education	0.054	0.201	0.071	1	0.790	1.055
Age of 30s	0.174	0.356	0.239	1	0.625	1.190
Age of 40s	1.005	0.340	8.714	1	0.003	2.731
Age of 50s	0.979	0.337	8.423	1	0.004	2.661
Age of ≥ 60	0.933	0.342	7.462	1	0.006	2.543
Ho Chi Minh	1.619	0.348	21.661	1	0.001	5.049
Hanoi	1.426	0.324	19.349	1	0.001	4.162
Constant	-3.718	0.429	74.961	1	0.001	0.024

P-value ≤ 0.05 ; reference group is same as Table 6

The greatest proportion of current bear bile users surveyed are considered small users (44.4%) as they only used bear bile from two to five times in the past two years. One-quarter of current users are classified as major bear bile consumers as they used bear bile more than 15 times in the past two years. Minor users (single usage) are the smallest group (11.3%). Hanoi has the highest consumption frequency of the three cities, with more than 50% of its users classified as either major (30.1%) or medium (20.9%) users, and only 7.0% minor users. In contrast, Da Nang has the lowest consumption frequency; most current users are small (51.4%) and minor (20.8%) users (Table 21).

People obtain bear bile from many different sources such as bear farms, cafés or wine bars, private homes or relatives, but more than 50% of bear bile users claim that bear bile is given by relatives or friends. Private households and bear farms are the second and third most common sources (private household: 15.7%, bear farm: 11.0%). A very small number obtain bear bile from hospitals and medical doctors (1.4%): No one from Da Nang said that they obtain bear bile from these sources. Another small number

Table 21. The frequency of bear bile use over the past two years.

Frequency	Hanoi		Da Nang		Ho Chi Minh		Total	
	n	%	n	%	n	%	n	%
Minor (once)	16	7.0	15	20.8	14	14.3	45	11.3
Small (2-5 times)	96	41.9	37	51.4	44	44.9	177	44.4
Medium (5-15 times)	48	20.9	11	15.3	26	16.3	75	18.8
Major (>15 times)	69	30.1	9	12.5	4	24.5	102	25.6

of users (42 people) obtain bile from traditional medicine shops, of which only 5 people in Da Nang indicated that they get bear bile from this source (Table 22).

The survey found 85 bear bile users who claimed that they would discontinue using bear bile in the future for various reasons. The number one reason they cite is the ineffectiveness of bear bile (52.9%). A much smaller number of them said that bear bile is too expensive (17.7%). Only a very small number of people will not use bear bile in the future because it is illegal (7.1%) or they are concerned about bears (5.9%). The remaining 28 people (32.9%) will stop using bear bile for many different reasons, such as “it is unsafe” or “it is difficult to find real bear bile” (Table 23).

Table 22. Sources where users claimed to have obtained bear bile.

Purpose	Hanoi		Da Nang		Ho Chi Minh		Total	
	n	%	n	%	n	%	n	%
Given by others	197	56.0	91	62.3	83	52.9	371	56.6
Private house	49	13.9	28	19.2	26	16.6	103	15.7
Directly from bear farm	49	13.9	8	5.5	15	9.6	72	11.0
Restaurant/cafe	21	6.0	12	8.2	13	8.3	46	7.0
Traditional medicine shop	27	7.7	5	3.4	10	6.4	42	6.4
Medical doctor/hospital	5	1.4	0	0	4	2.6	9	1.4
Other sources	37	10.5	13	8.9	17	10.8	67	10.2

Table 23. Stated reasons for discontinuing the use of bear bile.

Reason	Hanoi		Da Nang		Ho Chi Minh		Total	
	n	%	n	%	n	%	n	%
Ineffective	32	74.4	7	35.0	6	27.3	45	52.9
Too expensive	7	35.0	1	5.0	7	31.3	15	17.7
Illegal	1	2.3	2	10.0	3	13.6	6	7.1
Concerned about bears	1	2.3	2	10.0	2	9.1	5	5.9
Others	9	20.9	11	55.0	8	36.4	28	32.9

Similar to the non bear bile users group, 71% of bear bile users think that using bear bile is not in violation of Vietnam’s laws and regulations. Da Nang has the highest number of bear bile users who believe that using bear bile is illegal at 35% (Table 24).

Bear bile users rank all the measures for reducing bear bile consumption in the same order that non-users do. Medical alternatives to bear bile (31.3%) is rated as the most effective means to reduce the bear bile consumption in Vietnam. Greater awareness is also considered an effective measure (27.2%), followed by the closure of bear farming operations (24.0%). Law and enforcement is considered the least important and effective measure (beside ‘others’) amongst bear bile users, accounting for 15.9%.

Table 24: Responses to legality of bear bile usage by users

Is the use of bear bile illegal?	Hanoi		Da Nang		Ho Chi Minh		Total	
	n	%	n	%	n	%	n	%
Yes	94	26.7	51	34.9	45	28.7	190	29
No	258	73.3	95	60.9	112	71.4	465	71

The ranking is quite similar among bear bile users in Ho Chi Minh and Hanoi, but distinct for Da Nang. Bear bile users in Da Nang believe in both alternatives (30.8%) and closure of bear farming operations. In contrast, closure of bear farming in Vietnam only came in third in both Ha Noi (23.6%) and Ho Chi Minh (19.1%), after awareness raising. Da Nang has the lowest percentage of bear bile users believing in law and enforcement (10.3%) while there are higher percentages in Hanoi (17.3%) and Ho Chi Minh (17.8%) believing in this measure (Table 25).

More than one-third of the group who use bear bile for specific health problems believe that medical alternatives to bear bile are the most effective measure for reducing bear bile consumption in Vietnam, particularly in Ho Chi Minh City (42.9%). Meanwhile, only 34.2% of such bear bile users in Da Nang, the same as Hanoi, chose this measure. Many people that claim to use bear bile for general health improvement

Table 25. Responses to reduction of bear bile usage and closure of bear farming by users and geography.

Measures	Hanoi		Da Nang		Ho Chi Minh		Total	
	n	%	n	%	n	%	n	%
Alternatives	107	30.4	45	30.8	53	33.8	205	31.3
Greater Awareness	92	26.1	42	28.8	44	28.0	178	27.2
Closing down bear farm operations	83	23.6	44	30.1	30	19.1	157	24.0
Law and enforcement	61	17.3	15	10.3	28	17.8	104	15.9
Others	9	2.6	0	0	2	1.3	11	1.7

(24.4%) also consider the alternatives as an effective measure, especially in Da Nang (30.8%). However, only 20.4% of the same bear bile user group in Ho Chi Minh think that alternatives would be effective. Not surprisingly, only 11.1% of bear bile users who use bear bile for entertainment purposes consider medical alternatives an important measure for reducing bear bile consumption in Vietnam (Table 26).

Many bear bile users who use bear bile for different purposes believe that awareness raising is an effective measure for eliminating bear bile usage, especially among the group that uses bear bile for entertainment purposes (34.4%). Ho Chi Minh has the highest percentage of users for entertainment purposes (40.7%) believing in this measure, followed by Da Nang (34.8%). A large number of the users with general health improvement purposes also believe in awareness raising (32.7%), especially in Da Nang (38.5%) and Ho Chi Minh City (36.7%). In addition, one-quarter of the bear bile user group with specific health treatment purposes also support this method for phasing out bear farming in Vietnam (25.3%), particularly in Da Nang (27.4%; Table 27).

Table 26. Distribution of alternatives measures by user purposes and geography

Purposes of using bear bile	Hanoi		Da Nang		Ho Chi Minh		Total	
	n	%	n	%	n	%	n	%
Specific medical treatment	89	34.2	40	34.2	42	42.9	170	35.8
General health improvement	24	25.5	4	30.8	10	20.4	38	24.4
Entertainment/fun	3	7.5	3	13.0	4	14.8	10	11.1

Table 27: Distribution of awareness measures by user purposes and geography

Purposes of using bear bile	Hanoi		Da Nang		Ho Chi Minh		Total	
	n	%	n	%	n	%	n	%
Entertainment/fun	12	30.0	8	34.8	11	40.7	31	34.4
General health improvement	28	29.8	5	38.5	18	36.7	51	32.7
Specific medical treatment	67	25.8	32	27.4	21	21.4	120	25.3

Closure of bear farming operations in Vietnam is not strongly supported by survey participants in general, except amongst the smallest group of users who use bear bile for entertainment purposes (34.4%), especially those in Da Nang city (43.5%). Almost one-quarter (23.0%) of the group who use bear bile for specific medical treatments also believe in this measure and Ho Chi Minh has the least number of such users supporting this idea (17.4%). About one-fifth (21.8%) of the group using bear bile for general health improvement consider closure of bear farming an effective measure. This is one of the least favorable measures among such user group in Ho Chi Minh City (20.4%; Table 28).

Table 28: Distribution of closing-down bear farm operation measures by user purposes and geography

Purposes of using bear bile	Hanoi		Da Nang		Ho Chi Minh		Total	
	n	%	n	%	n	%	n	%
Entertainment/fun	14	35.0	10	43.5	7	25.9	31	34.4
Specific medical treatment	60	23.1	32	27.4	17	17.4	109	23.0
General health improvement	21	22.3	3	23.1	10	20.4	34	21.8

In general, law and enforcement is considered the least effective measure for reducing bear bile consumption in Vietnam. Bear bile users in Da Nang particularly do not seem to believe in this measure (Table 29). Only a very small number of bear bile users consider other measures effective in phasing out bear farming in Vietnam, none of whom are from Da Nang (Table 30)

Table 29. Distribution of law and enforcement measures by user purposes and geography

Purposes of using bear bile	Hanoi		Da Nang		Ho Chi Minh		Total	
	n	%	n	%	n	%	n	%
Entertainment/fun	10	25.0	2	8.7	5	18.5	17	18.9
Specific medical treatment	39	15.0	13	11.1	17	17.4	69	18.5
General health improvement	17	18.1	1	7.7	10	20.4	28	18.0

Table 30. Distribution of other measures by user purposes and geography

Purposes of using bear bile	Hanoi		Da Nang		Ho Chi Minh		Total	
	n	%	n	%	n	%	n	%
General health improvement	4	4.3	0	0	1	2.0	5	3.2
Specific medical treatment	5	1.9	0	0	1	1.0	7	1.5
Entertainment/fun	1	2.5	0	0	0	0	1	1.1

CHAPTER IV

DISCUSSION

Bear bile usage and public attitudes

Of those surveyed throughout the nation, 22% have used bear bile in the past. Only 13% indicated that they had used bear bile in the past two years. A large number of respondents (38%) who had never used bear bile in the past said that they did not use it because they had never needed it. Most of these respondents (91%) indicated that they will not use bear bile in the future. These results suggest that domestic consumption of bear bile at the national level is currently not a widespread problem but there are specific demographic groups where usage is greater. Regionally for example, bear bile usage is clearly most serious in Hanoi, as the survey results show that this city has the highest percentage of people (35%) using bear bile in the past and 65% of them indicated that they will continue to use bear bile in the future.

Some signals point to the potential for bear bile usage to become a bigger problem nationwide in the future, as 8% of non-users say that they expect to use bear bile in the future, and another 21% indicated that they may possibly use bear bile in the future. This means there is a potential for a much greater bear bile demand in Vietnam in the future as people remain open to the possibility of using it. It is possible that as non-bear bile users age, they will start to use bear bile when their health deteriorates if they believe their

health problems can be cured by bear bile. Only a small number of non-bear bile users (3%) do not use bear bile because they believe it is ineffective.

The fact that only a very small number (1%) of non-users do not use bear bile because it was illegal shows that laws regarding the use of bear bile do not have any significant impact upon people's consumption decisions. Only 29% of bear bile users and 26% of non-bear bile users realize that using bear bile is illegal. Despite the highest protection status under the government law of both Vietnamese bear species, using bear bile is not considered a crime by the public or enforced by local authorities. Local authorities often ignore crimes, including bear bile extraction, sale and use. Bear bile consumption is widely and socially acceptable in Vietnam; the fact that it is openly sold at bear farms, shops, restaurants and on street corners shows that Vietnamese government is not effectively publicizing the existence of laws forbidding bear bile use. The functional authorities who are aware of the law do not show strong commitment to carrying out their legal responsibilities. In fact, on the subject of bear bile, traditional customs outweigh the government's policies, and neither the public nor the authorities show much respect for the nation's laws.

Beyond legalities, the welfare of bears is not a major concern amongst the general public. Very few of the non-bear bile users (2%) or users (1%) who plan to avoid bear bile consumption in the future are doing so out of concern for the well-being of bears. This suggests that people do not see any connection between bile products and their origins: a big bear kept in a tiny cage that suffers pain from the regular bile extraction process - or if they do, are not troubled by this. The concept of 'welfare' is extremely

new to Vietnam, in fact, there is no exact translation of this word into the Vietnamese language. In a country where people are willing to eat any creature, it is not surprising that animals are traditionally treated very poorly. Generally, people in Vietnam have not yet developed sympathy and love for other species, including those that are comparatively close to humans, such as dogs and cats.

The first regression model (Table 6) suggests that age is the most determinative factor in the decision to use bear bile. People in their 20s (the youngest group surveyed) were the smallest user group. However, the older people get, the more likely they are to become bear bile users. People in their 30s are twice as likely to use bear bile as those in their 20s. This ratio generally increases by age group. The oldest group (≥ 60) is the most likely to use bear bile, 2.8 times higher than those in their 20s. The greater use of bear bile among the older generation in Vietnam corresponds with traditional ways of thinking, which are heavily influenced by Chinese culture. According to Craig (2002), prior to the 1990s, many Vietnamese depended almost entirely on traditional medicine for all but the most serious illness. Those folk treatments are particularly influenced by Chinese concepts of yin and yang. Because medicine usually deals with invisible and immaterial elements, Vietnamese rarely feel the need for invasive techniques or surgical procedures (Nguyen 1985), while traditional medicine is familiar to them and they feel comfortable with it. Therefore, senior Vietnamese will not go to a doctor or a hospital until absolutely necessary. Some elderly patients hesitate to seek care at a hospital because they are afraid of the hospital environment or uneasy about the kinds of treatments used there (D'Elia 2008). However, views have changed among younger

Vietnamese generations, who tend to be pro-western medicine and techniques, and only small numbers of them are still influenced by their parents' thinking and practices.

Another reason for the greater usage of bear bile among older people is that as people get older, they have more health problems and become more concerned about their general health. People who are older than 39 are 3 times more likely to use bear bile for general health improvement than those in their 20s. A traditional method for improving health is eating products made from plants and animals, especially products made from wildlife: “*Ruou thuoc*” (rice wine mixed with plants and animals, usually wild animals) is one of the most popular products consumed for this purpose. In the past, snakes and geckos were the most common species to be put in rice wine, but today Vietnamese people will put nearly any wild animal or animal parts in the wine, such as porcupine stomachs, whole macaques and bear paws. Many endangered species are used in *ruou thuoc*, including bear for their bile and paws, and tiger for their bones. According to an owner of a forest specialty restaurant in Vietnam, Mr. Ha Le Hung, there are more than 100 kinds of medicinal wine made from wildlife: each is prescribed for a different ailment – one for old men with back bone problems, another to aid digestion or circulation and so on (Bray 2010). Bear bile is most commonly used by older people in wine at breakfast, lunch and dinner for the purpose of health improvement.

Middle-age people (between 30s and 50s) are twice as likely to use bear bile for entertainment purposes than those in their 20s or seniors (≥ 60 years of age). As individuals reach their 30s and 50s, many are reaching peaks in their careers and access to luxury lifestyles. This might explain why men are 12 times more likely to use bear

bile for entertainment than women. After daily working hours in the office, restaurants are usually filled with men who enjoy drinking and eating with their work colleagues and friends, while women often rush home to prepare dinners and take care of their kids. Although Hanoi has the highest percentage of bear bile users, people in Da Nang and Ho Chi Minh are somewhat more likely (1.4 times) to use bear bile for entertainment. The partying habits of southern people might be the source of this contrast.

People in their 20s represent the smallest bear bile consumer group. Like all other age groups, young people that use bear bile do so chiefly for specific medical treatments. The low usage for entertainment and general health improvement might result from the fewer health problems typical of this age group, so they may see little need for traditional medicines. They also tend not to have much spending power and less access to luxury goods.

The difference in use of bear bile among the three cities is pronounced. Hanoi, the capital of Vietnam and representative of the country's north, has the highest percentage (35%) of people using bear bile, while both Da Nang (central) and Ho Chi Minh City (south) have similarly low percentages of people using bear bile (15% and 16%). The regression model indicates that Hanoians are 2.5 times more likely to use bear bile than people in Ho Chi Minh. This difference might be explained by the historically strong influence of Chinese culture in the north of Vietnam. The use of wildlife products has been rooted in Chinese culture for millions of years (Mainka et al. 1995). Many other Chinese customs and beliefs are shared in northern Vietnam, including daily practices such as observance of the moon calendar, eating meals with chopsticks, keeping new-

born babies in the dark, no-bathing for a mother for the first month after giving birth, and popular special events such as Chinese New Year and Mid-Autumn Moon Festivals. Many aspects of Chinese culture have also been adopted in the south, but Chinese culture has become blurred and given more of a local flavor there, except in some areas of Ho Chi Minh City where many Chinese-Vietnamese reside. Despite the active Chinese culture in Ho Chi Minh City, the city is influenced more strongly by Indian and Thai culture (Nguyen 2001). The central region, on the other hand, traces its roots to the Cham culture, a formally independent country from the north. None of these cultures have as strong and long history of using wildlife products as the Chinese does.

While geographical location is a factor in the use of bear bile, so too is gender, with the survey finding that men are 1.8 times more likely to use bear bile than women. As mentioned previously, the surveyors reached many more women via telephone than men because women are more inclined to spend more time at home doing housework and taking care of the family. Men tend to spend more time outside the house, either working during the day or socializing with work colleagues or friends after work. As Nghe et al. (2003) state, much of male socialization takes place during the consumption of alcohol in a social environment involving peers, family and business acquaintances. Men have the opportunity for binge drinking every day and may do so regardless of their personal wealth. Part of being a “real man” is to develop a tolerance for alcohol and the most common way of consuming bear bile for entertainment and other purposes in Vietnam is to mix it with rice wine.

The survey revealed that women use bear bile mainly to cure a specific health problem (88%), while men use bear bile for all three purposes: general health improvement (33%), entertainment (25%) and most frequently for curing a specific health problem (58%). A large number of men in their 30s and 40s use bear bile for both general health improvement and curing specific health problems. This is probably because Vietnamese men tend to be more concerned about their sex life than women and they believe that wildlife products such as bear bile can help improve their vigor. When using bear bile to cure a specific health problem, it is common to put it directly on bruises or where it aches rather than to dilute it with rice wine.

The use of bear bile is also associated with education levels. People with a higher education are 1.7 times more likely to use bile than people with lower levels of education. People with higher education levels tend to have better jobs and better incomes, they can afford to be more concerned about their health and have greater access to luxury products, while people with lower incomes cannot afford to spend as much on these. As Dalton et al. (2002) say, higher levels of income and education also increase participation in an array of social networks.

Respondents widely consider bear bile to be a wonder drug that can cure a variety of illnesses, including serious health problems like lung cancer. A large number of bear bile consumers (67%) believe that bear bile is useful for sprains, bruises and muscle complaints and 40% of bear bile users think that bear bile is a good source of vitamins (Table 13). In fact, 56% of bear bile users who believe that bear bile is a good source of vitamins use bear bile for specific health problems, 45% use bear bile for a general health

problem, and 16% use bear bile for entertainment purposes (Figure 4.1). These types of uses also correlate strongly with Chinese culture and the growing number of wealthy people in Vietnam. These beliefs have almost certainly always existed amongst Vietnamese people, yet the use of bear bile has only become a serious problem since the economy in Vietnam strengthened and people became much wealthier than in the past.

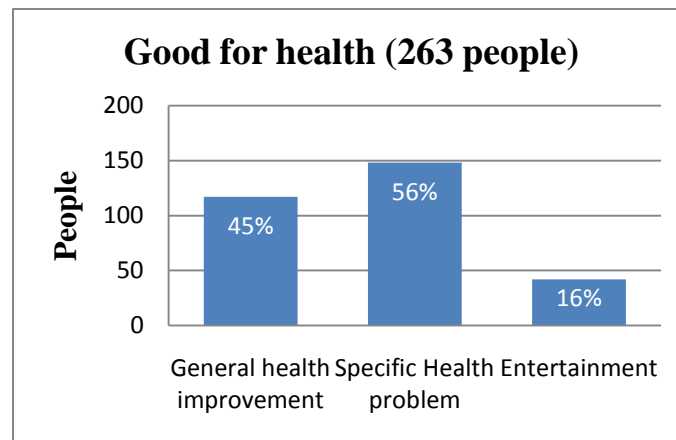


Figure 4.1: Types of usage among the group who believe bear bile is “good for health”

To eliminate bear bile consumption and commercial bear farming operations in Vietnam, both bear bile users and non-users believe that using medical alternatives is the most effective measure, especially among those that use bear bile for specific medical treatments. Greater awareness is considered the second most effective by both groups, especially among the people who use bear bile for entertainment purposes and general health improvement. Law and enforcement is considered the least effective measure in eliminating the consumption of bear bile in Vietnam by both bear bile users and non-bear bile users. Closing down bear farms is also considered ineffective. In general, Vietnamese people probably do not believe that consuming bear bile or even keeping

illegal bears would lead to severe punishment or jail sentences, even though on paper, bears are strictly protected by law. People generally have no respect or faith in the law and its enforcement in Vietnam; one of the main reasons is that corruption is widespread and openly occurs in every corner of society. As former president Tran Duc Luong said “corruption is taking place every day and every hour, at all places, all the time” (Maitland 2001). Many directors of local Forest Protection Departments are more concerned about earning regular extra income for the department by lowering the level of administrative fines than transferring criminals and cases to higher authorities for punishment. Due to a lack of trust in law enforcement, medical alternatives to bear bile and awareness raising are most recommended by both users and non-users because they are probably believed to be more practical and effective in Vietnam.

Conservation of Vietnam’s bears

The results of this survey suggest that to protect Vietnam’s bears, a nationwide and long-term awareness program should be carried out to help the general public realize that bear bile is not a magic medicine, and cannot cure health problems as is commonly believed. The campaign should recommend that people seek help from professional doctors when they get sick or for their general health improvement. Both herbal and western medicine alternatives should be promoted via national and local television and radio channels. As seniors often use bear bile for both specific health problems and general health improvement, herbal alternatives are probably very attractive to them as they are already familiar with these traditional remedies. Many herbal alternatives have been identified by Chinese scientists (WSPA’s Finding Herbal Alternatives to Bear Bile

report 2005). Herbal alternatives might also be an effective recommendation for middle-aged people, especially people in their 40s-50s who do not have advanced education, as many of them still hold strong beliefs in traditional medicine. Western medicine will probably appeal more to those with more modern habits and open mindsets like young and middle-aged people with advanced education. Western alternatives such as ibuprofen should be widely advertised as it is more effective than bear bile, and readily available in pharmacy shops around the countries at a reasonable price.

Efforts to promote alternatives to bear bile should be sensitive to geographic differences in Vietnam. For example, more effort should be focused on bear bile users in Hanoi, where consumption is far more common than in other areas. The fact that bear bile consumption is much greater in Hanoi also indicates that traditional thinking is still very strong within the minds of a large number of northerners. A long-term and regular program to dispel ideas about the magical properties of bear bile is essential for successful campaigns there.

Awareness efforts should also target the smaller group of bear bile consumers who use it for entertainment purposes, as this group will potentially become larger as the economy develops. In addition, the program should focus on current and potential users as well as the general public at the national level. A nature and environmental education program should also be integrated into each school's daily curriculum, instilling environmental values amongst Vietnam's younger generations. As the belief in and the use of bear bile is deeply engrained in the Vietnamese psyche, it is unreasonable to assume that a culture that has used traditional Chinese medicine for thousands of years

will suddenly abandon this form of therapy (Manika et al. 1995). It will take a long time to change mindsets.

The government of Vietnam needs to strengthen laws and enforcement because awareness raising and promotion of bear bile alternatives alone will be insufficient. It is no accident that most of the survey participants do not believe in laws and enforcement as an effective measure for eliminating bear bile consumption or phasing out bear farming in Vietnam. Their lack of respect for functional agencies in performing their duties indicates that the government does not treat wildlife crimes seriously. Strengthening laws and enforcement will not only increase the trust and respect among the general public but also send a strong message to bear crime violators and their protectors who would then have to take a much greater risk in committing bear crimes. As the government becomes tougher in enforcing the law, bear farmers' protectors within the government offices will drop their ties and support if their jobs and reputation become threatened. Hence, bear farmers will have to think twice before violating the laws as it is not easy for them to hide bears in their backyards.

As part of the law improvement process, all wildlife protection policies need to be thoroughly reviewed by the government as currently there are many conflicts between decrees, circulars and decisions issued by the Ministry of Agriculture and Rural Development (MARD), leaving provincial Forest Protection Departments to pick and choose those which give them the most advantage (i.e., earning extra money and requiring the least amount of work). For example, all captive bears that cannot be proven to be legally obtained according to Decree 32/2006 ND-CP should have been confiscated.

Instead, the number of captive bears has risen and become an almost impossibly large problem for the government to deal with. The government finally made the first effort to stop this illegal business by registering all the current captive bears and requesting provincial authorities to apply administrative fines only to illegal bear farmers and register the bears by February 2005. In 2008, MARD sent out a correspondence No. 970/BNN-KL suggesting that local authorities should not prosecute illegal bear farmers and confiscate the bears. The letter suggests that illegal bear farmers should only have to pay an administrative fine for their crime and get to keep the bears. As a result, many local authorities have chosen this solution as it is easier than enforcing the original law. Addressing such legal problems in laws and policies will eliminate the excuses of functional agencies, including MARD, for improper enforcement, and lend stronger public support and respect in the government.

In addition to the foregoing recommendations, scientists should carry out thorough research on Vietnam's wild bear populations. There are currently more than 4,000 bears being kept in Vietnam to support the domestic and international bear bile market, but there has yet to be a study of bears in the wild. Conservationists, scientists, and law enforcement officers have very little knowledge about the country's two species of bears, such as their home range, populations or ecological behaviors. A study would not only provide an estimate of bear populations, distribution and ecology, but would identify major threats to them in nature and critically important areas for population protection and recovery.

The monitoring of bear farms urgently needs to be improved to prevent new bears from being taken from the wild. The provincial Forest Protection Departments must provide accurate monthly reports about the number of bears in their provinces. Spot checks should be carried out by the National Forest Protection Department on a regular basis without advanced notice. All unregistered bears must be confiscated and the owners must be severely punished according to the law. In addition, the leadership of the provincial Forest Protection Department where bear crimes repeatedly occur should be replaced. This will send a clear message to other provinces about the government's seriousness in doing their job in general, and fighting bear crimes in particular. These actions will also increase trust and respect amongst the public toward laws and functional authorities in doing their jobs.

Moreover, local authorities must act to prevent owners from continuing to make profits from registered bears, including issuing severe administrative fines to farmers who extract and sell bear bile, and confiscating all the equipment and involved bears as evidence of the crime. Repeated crimes should be even more severely punished, making it unprofitable for bear owners. All bears that die in captivity must be turned over to authorities and incinerated to ensure that no one can make money from dead bears. This will not only make it less desirable for bear farmers to keep registered bears but also decrease the demand for more bears at these facilities.

Implications for conservation of other endangered species in Vietnam

This study is one of the first efforts to delve into the social issues that strongly impact upon the survival of endangered wildlife in Vietnam. The better understanding of bear bile consumption it affords should not only help the government, conservation organizations and ecosystem managers to develop more effective strategies to protect the last remaining bear populations and address the commercial bear farming operations in Vietnam, but should have strong implications for the conservation of other endangered wildlife such as tigers, elephants and pangolins in the region. The culture of using bear bile is undoubtedly very similar to the consumption of other wildlife products such as wildlife meat, tiger glue and pangolin scales.

The success or failure of conservation and protection of Vietnam's bears has a direct impact on other species, especially tiger conservation. Currently, the commercial farming of tigers is growing rapidly, in ways very similar to the bear farming situation. If Vietnam is successful in eliminating commercial bear farming and reducing bear bile consumption, it will greatly and positively impact upon the protection of bear populations in the wild, and will provide a blueprint for conserving tigers and other endangered wildlife in Vietnam and throughout Asia.

CHAPTER V

CONCLUSION

Nearly one-fourth of the Vietnamese public surveyed for this study indicated that they have used bear bile in the past. Bear bile is consumed by both men and women in Vietnam, but more men consume bear bile than women. Most women use bear bile to treat health specific health problems, a small number of them uses it as a vitamin source and very few of them use bear bile for entertainment. In contrast, bear bile usage among men varies, depending on age, education and geography. Most young and senior men use bear bile to cure specific health problems while middle-aged men who are probably at the peak of their careers also commonly use bear bile for entertainment, especially more highly educated men.

Bear bile consumption is currently not a major nationwide problem but it is clearly a serious problem at a local level in Hanoi. Hanoi has a much higher percentage of bear bile consumers compared with both Ho Chi Minh and Da Nang. However, the study results indicate that bear bile consumption will potentially become a bigger problem in Vietnam as many people who have not used bear bile in the past say that they will use bear bile in the future. Conservation organizations like ENV should carry out additional surveys in rural areas in order to compare the consumption and usage of bear bile between cities and rural areas.

Survey participants believe that medical alternatives to bear bile are the most effective measure to reduce bear bile consumption and phase out bear farming in Vietnam, followed by greater public awareness. In contrast, law and enforcement are not considered effective measures, probably because people do not have faith in current laws and enforcement carried out by authorities.

To protect Vietnam's bears, the government of Vietnam and conservation organizations should develop a national awareness campaign to help public understand that bear bile is not a magical medicine. The campaign should also promote medical alternatives to bear bile and the conservation of Vietnam's last bear populations in the wild, and encourage people to find other attractive solutions to endangered wildlife products for entertainment purposes. In addition, the government needs to strengthen laws and law enforcement. The level of punishment should be increased, especially to serious wildlife crimes involving IB animal species like bears and tigers. Enforcement authorities should be held accountable for their actions and performance.

This study reveals important factors explaining for the increasing demand of bear bile consumption in Vietnam. Findings from this study will not only help the government of Vietnam and conservation NGOs address problems associating with the protection of Vietnam's bears but also other endangered species threatened by illegal hunting and trade. However, the study is limited to studying the demand for a particular wildlife product, bear bile, in three representative geographical cities so it does not represent the complete picture of wildlife consumption in Vietnam. Vietnam urgently needs a wide range of thorough studies, not just on wildlife ecology and their current

status but also the illegal wildlife trade situation in Vietnam. When carrying out this research, I found very few specific journal articles on this subject. Most of the literature on Vietnam is either in the form of reports or news articles and most of the reports are about illegal hunting and trade in a protected area. Further studies should identify important trade routes, the dynamics of trade in different species, and both supply and demand sides of the wildlife trade, such as the economic aspects of the trade, and important social factors promoting the trade.

APPENDIX

Bear Bile Attitude Survey Form

code

Dear Sir/ Madam,

We are carrying out the research on using bear bile of people in Ha Noi/HCMC/Danang. The effort of this research most depend on the information you provide us. Therefore, we hope we can get your co-operation by answer full our following question to complete this research.

Thanks so much.

Address (or telephone number):.....

Time to survey: from.....hrs to.....hrs

Date to survey: date...../month...../year.....

Interviewer:.....

Survey Questions Section 1: All Respondents

Question 1: Age of survey subject: (obtain exact age in years).

Question 2. Gender of the subject:

1 Male

2 Female

Question 3. Education: Indicate the level of education completed (select one).

- 1 Illiterate
- 2 Primary school
- 3 Secondary school
- 4 High school
- 5 Intermediate
- 6 University
- 7 Advanced university degree
- 8 Others.....

Question 4. Have you ever used bear bile?

- 1 Yes (Next to survey question section 2– question 5)
- 2 No (Next to survey question section 3– question 15)

Survey Questions Section 2: People Who Have Used Bear Bile

Question 5. What have you used bear bile for? (respondent may select one or more answers)

- 1 General health improvement
- 2 Specific medical treatment
- 3 Entertainment/fun
- 4 Other:

Detailed explain.....
.....
.....

Question 6. Based on your knowledge, what medical problems or ailments is bear bile useful in treating?

List all ailments or medical problems stated (use additional space if needed)

.....
.....
.....
.....
.....

Question 7. Where did you get the bear bile from? (respondent may select one or more answers)

- 1 Directly from bear farm
- 2 Traditional medicine shop
- 3 Restaurant/Café/ bar
- 4 Private household
- 5 Medical doctor/Hospital
- 6 Given to you by others
- 7 Other source:

.....
.....

Question 8. Have you used bear bile anytime over the past two years?

- 1 Yes **(Next to question 9)**
- 2 No **(Next to question 10)**

Question 9. If yes to question 8, how often have you used bear bile over the past two years?

Select exact or APPROXIMATE number

Indicate approximate number of times bear bile has been used:

(Next to question 13)

Question 10. If you have not used bear bile in the past two years, might you decide to use bear bile again in the future?

1 Yes **(next to question 13)**

2 No **(next to question 11)**

3 I don't know or not sure **(next to question 13)**

Question 11. If you plan not to use bear bile again in the future, what factors have influenced your decision to stop using bear bile? (respondent may select one or more answers)

1 Too expensive

2 Ineffective

3 Illegal

4 Concerned for bears

5 Other:

.....
.....

Question 12. Explain in greater detail how and why you made a decision to stop using bear bile?

Survey team record complete answer carefully

Explain.....
.....
.....

Question 13. Use of bear bile is illegal. As far as you know, is use of bear bile illegal?

- 1 Yes
- 2 No
- 3 I don't know

Note: If the respondent answers No in question 13, the interviewer can explain that use bear bile is legal and next to question 14.

Question 14. Which measures is the most important should be taken to reduce and eliminate use of bear bile in Vietnam?

Respondent should indicate whether each option is the most important

- 1 Stricter laws and more effective enforcement of laws
- 2 Cheaper and more effective alternatives available to the public
- 3 Greater public awareness
- 4 Close bear bile farming operations
- 5 Other:.....
.....

Finish and thank the respondent for their assistance and conclude the survey.

Survey Questions Section 3: People Who Have Not Used Bear Bile

This section should be completed ONLY for respondents that answered “NO” to question 4.

Question 15. Why have you chosen not to use bear bile? (select one or more answers)

- 1 Too expensive
 - 2 No effect
 - 3 Illegal
 - 4 Concerned for bears
 - 5 Other:
-

Question 16. Explain in greater detail how and why you made a decision not to use bear bile?

(Survey team record complete answer carefully)

Explain:

.....

.....

Question 17. Would you consider using bear bile in the future?

- 1 Yes
- 2 No
- 3 I don't know

Question 18. As far as you know, is use of bear bile illegal?

- 1 Yes
- 2 No
- 3 I don't know

Note: If the respondent answers No in question 13, the interviewer can explain that use bear bile is legal and next to question 19

Question 19 Which measures is the most important should be taken to reduce and eliminate use of bear bile in Vietnam?

(Respondent should indicate whether each option is the most important)

- 1 Stricter laws and more effective enforcement of laws
- 2 Cheaper and more effective alternatives available to the public
- 3 Greater public awareness
- 4 Close bear bile farming operations
- 5 Other:.....
.....

Finish and thank the respondent for their assistance and conclude the survey.

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