



AkiNik

International Journal of Herbal Medicine

Available online at www.florajournal.com

I
J
H
M

International
Journal
of
Herbal
Medicine

A Preliminary Survey on the Medicinal Uses and Effectiveness of *Pereskia bleo* Used by People of Three Villages in the State of Kelantan, Malaysia

Khor Poh Yen*, Mohd Syafiq Bin Abdullah, Suryati Syafri, Shaarmini Kula Raju, Che Amal Hayati Che Yahya

ABSTRACT

This study is aimed at exploring the medicinal uses and perceived effectiveness of *Pereskia bleo* in treating certain diseases among the users from three selected villages in the State of Kelantan in Malaysia. This study employed qualitative, structured interview research design. The survey was carried out in three villages in the State of Kelantan in Malaysia. The names of the villages are as follows: *Kampung Banggol Setol*, *Kampung Bunut Susu* and *Kampung Cherang*. Nine informants, who were actually using *Pereskia bleo* for treating certain diseases, were recruited by the snowball sampling techniques. Thematic Content Analysis method was used for the analysis of data collected from the informants' interview responses. The use of *Pereskia bleo* to treat diseases by users was based on the recommendation of their relatives and friends. Without consuming any medications from the hospitals, the users reported that the use of leaves, tips and flower of *Pereskia bleo* was alone effective against cancer, hypertension, boils, diabetes mellitus and also as a health supplement. No conclusive medical studies had been reported on the potential effects of *Pereskia bleo* on hypertension, diabetes mellitus and boils as reported and claimed by the informants. Thus it may be necessary to do further research to evaluate the use of *Pereskia bleo* in terms of its safety, efficacy and quality.

Keywords: *Pereskia bleo*, Medicinal Uses, Malaysia.

1. Introduction

Pereskia bleo (*P. bleo*) is a spiny shrub, leafy green stem of the genus of *Pereskia* and family of Cactaceae^[1,2]. It originates from Paraguay, Argentina and Korea^[1]. There are various local names for *P. bleo*; for example, it is known as Jarum tujuh bilah, Jarum tujuh or pokok kanser in the Malay language, Rose Cactus or Pereksia in English, or Chat Sim Chan in Chinese. The leaf of this plant is oval in shape, succulent, green coloured and glossy. It produces a waxy hemispherical green fruit with big, black coloured seeds which turn yellow when ripe. It also produces medium size, orange coloured, roses-like flower^[1].

In-vitro cytotoxicity screening and cytotoxic effects on cancer cell lines of *P. bleo* leaf had shown different findings from previous studies. For example, an early study by Tan^[3] found that methanol extract of *P. bleo* plant contains bioactive compound that is able to induce apoptosis in breast carcinoma. Similar findings from Sri Nurestri, Sim, Abdul Wahab and Yaacob^[4] and Sri Nurestri et al.^[5] showed that *P. bleo* contains natural constituents such as α -tocopherol, which possessed very remarkable cytotoxic activity against human nasopharyngeal epidermoid carcinoma cell line.

Besides that, Sim, Sri Nurestri and Norhanom^[6] indicated that Ethyl acetate extract and hexane extract of *P. bleo*'s leaves have high antioxidant activity. The most recent antioxidant activity identified the presence of high bioactive compounds in *P. bleo* leaves extract: catechin, quercetin, epicatechin, myricetin, β -carotene and α -tocopherol^[7]. However, these findings was contradict with Wahab et al.^[8] who found no any potential anticancer activities by using hexane, dichloromethane, ethyl ecetate and methanol extracts of *P. bleo* leaves.

ISSN 2321-2187

IJHM 2013; 1 (3): 1-4

© 2013 AkiNik Publications

Received: 28-7-2013

Accepted: 09-8-2013

Khor Poh Yen,

Faculty of Pharmacy and Health Sciences, Royal College of Medicine Perak, University Kuala Lumpur, Malaysia.

Mohd Syafiq Bin Abdullah,

Faculty of Pharmacy and Health Sciences, Royal College of Medicine Perak, University Kuala Lumpur, Malaysia.

Suryati Syafri,

Faculty of Pharmacy and Health Sciences, Royal College of Medicine Perak, University Kuala Lumpur, Malaysia.

Shaarmini Kula Raju,

Faculty of Pharmacy and Health Sciences, Royal College of Medicine Perak, University Kuala Lumpur, Malaysia.

Che Amal Hayati Che Yahya,

Faculty of Pharmacy and Health Sciences, Royal College of Medicine Perak, University Kuala Lumpur, Malaysia.

Correspondence:

Khor Poh Yen,

Faculty of Pharmacy and Health Sciences, Royal College of Medicine Perak, University Kuala Lumpur, Malaysia.

E-Mail: pykhor@rcmp.unikl.edu.my

Nevertheless, in the antimicrobial activity, methanol, hexane and ethyl acetate extracts of *P. bleo* exhibited modest inhibition against *P. aeruginosa* and *B. subtilis* at 500mg/ml. This inhibitory activity declined when the concentration was lowered to 50mg/ml^[9]. Again, this finding was inconsistent with Wahab et al.^[8] which found that hexane and methanol extract of *P. bleo* was able to inhibit highly and moderately against *P. aeruginosa* and *S. choleraesuis* respectively.

Anecdotal reports showed that different parts of *P. bleo* are being used as traditional remedy to treat diseases of users in Malaysia. For example, the gel from the fruit had been reported to have effectively treated itches and swellings on the skin^[10]; one to three fresh leaves eaten raw or taken as a concoction have been reported to provide natural remedy in cancer-related diseases^[1]. However, there is no scientific documentation about the *P. bleo* users' experienced-based opinion on its medicinal uses and effectiveness in treating diseases. In researcher's point of view, the exploration of users' perceptions based on their real experiences such as *P. bleo* part(s) used; ailments and the conditions treated; preparation and administration method are very important. This is because this information may lead to phytochemical, pharmacological, clinical and biochemical investigations in future. Therefore, through this study, the researchers are attempting to explore and gather more details on *P. bleo* from traditional herbal users from three villages in the state of Kelantan, Malaysia

2. Materials and Methods

2.1 Research Design

This study used the qualitative semi-structured interviews with the intention of allowing new viewpoints to emerge freely. The semi-structured interview questionnaire used in the study was constructed by researchers. The questionnaire was constructed in the Malay language and the questions focused on five aspects: 1) demographic information of informants (age, gender, occupation, educational background and from whom they got the recommendation to use/ practise the traditionally used *P. bleo*; 2) background information about the plant (local name of plant, part(s) used); 3) types of conditions treated; 4) preparation and administration method; and 5) the known *P. bleo* cases successfully treated. The semi-structured interview questionnaire was piloted during the pre-visit.

2.2 Location

The survey was carried out in three villages in the State of Kelantan, Malaysia: *Kampung Banggol Setol* (6.05°N, 102.083°E), *Kampung Bunut Susu* (6.083°N, 102.1677°E) and *Kampung Cherang* (6.721°N, 102°162°E). These villages were chosen based on the availability of community of users of *P. bleo* from the pre visit done in March 2012.

2.3 Selection of Informants

A total of nine informants participated this study. Two *P. bleo* users were initially identified and invited to participate in the study. Snowball sampling was subsequently used to identify additional users. The main criterion of selecting the informant: He must be

someone who was using this plant for treating diseases at the material time of this research. The process of interviewing was continued until no more informants could be recommended^[11].

2.4 Ethical Consideration

This study did not have the approval of the ethics committee; however it was evaluated and approved by the Research Committee of the University. Verbal permission from the village Chief concerned was obtained before researchers entered the villages. The informants were furnished with the written consent in the Malay Language to be read prior to taking part in the study. The interview sessions were taped recorded in the Malay Language or local dialects of Kelantan. The informants were assured of utmost confidentiality of the information tendered during the interviews.

2.4 Data Collection

All the interviews were conducted in May 2012. The informants were interviewed in their respective homes. The duration of the interviews varied from 15 to 20 minutes. At the beginning of each interview, the informants were asked to sign the consent form, which also included details about their rights as informants in this research and prior approval for tape recording. Along with tape recording, the researchers took field notes to facilitate data analysis and provide a backup for important findings in case certain data elements were missed during the taping of interviews. The researchers were invited by the users to the compound area of their houses where the *P. bleo* is planted. The *P. bleo* specimens were collected and sent for identification at the Institute of Biosciences, University Putra Malaysia. The Voucher number obtained is SK 2025/12.

2.5 Data Analysis

Thematic Content Analysis method was used to analyze the data collected from the informants. The interview tapes were transcribed into the written form. Each transcript was read thoroughly by all the researchers. As a first step, each of the questions of the interview script was used as a broad theme and the responses of the informants were classified under it. After the primary coding of all transcripts, analysis sheets were re-coded into comprehensive broad themes and subthemes. Any coding disagreements between the researchers were resolved in a series of research meetings until a final list of sub-themes were generated and tabulated.

3. Results

Majority informants were aged 50 years and above. All were Malays. Most of them had had primary school education and were self-employed. Majority of them were recommended by their friends to use *P. bleo* to treat a variety of health problems. The most common, local name of *P. bleo* as reported by the informants were *duri tujuh*. Most of the informants first tried to use the plant based on its efficacy to cure diseases.

Table 1: Profile of informants

Information	Characteristic	Number	%
Ethnicity	Malay	9	100
Gender	Male	7	78
	Female	2	22
Education	Primary	7	78
	Secondary	1	11
	Tertiary (college/ university)	1	11
Age Range (years)	41-45	1	11
	46-50	2	22
	Above 50	6	67
Occupation	Self-employed	8	89
	Retired	1	11
Source of herbal information	Friends	7	78
	Relatives	2	22
Local name of <i>P. bleo</i>	Duri tujuh (seven pines)	5	45
	Daun tujuh helai (seven leaves)	1	11
	Cactus rose	1	11
	Sembilan bilah (nine pieces)	2	22
	Pokok duri sembilan (nine spines plant)	1	11
What provided the confidence to use this plant?	Belief from ancestors	3	34
	Effectiveness	4	44
	Availability in the village	1	11
	Gift from God	1	11

From the study, researchers summed up the view that *P. bleo*'s leaves, tips, flower were used extensively by the informants as a health supplement or to treat cancer, hypertension, diabetes mellitus and boils. Eating plant parts fresh is the most common practice carried out by the informants. The details on the parts used, methods of use and the efficacy are reported as follows.

3.1 As a health supplement

One informant reported that he ate seven pieces of young shoots daily as a side dish when he was not feeling well. The effects can be observed in a few days.

3.2 Treating Cancer

Two informants shared their experience of using *P. bleo* to treat cancer as had been diagnosed by doctors. The first informant expressed that he chewed seven pieces *P. bleo* tips daily for five years since he had been diagnosed with nerve cancer. Without any medication from the hospital, he said he had recovered from the nerve cancer at present.

The second informant also shared his experience of using *P. bleo* leave to cure cancer. According to this informant, he ate not merely the leaves alone as the shaman would mix *P. bleo* leaves with some woody ingredient.

However, for own use, this informant recommended to count the leaves from one to seven in ascending order then in descending order. Then, dip the leaves in boiled water for a few minutes before drink.

3.3 Muscular Ache

One of the informants told the researchers that when he experienced a muscular ache, took the plant tips daily and regardless amount of tips taken, within two to three days, he could feel that he had recovered from the muscular ache.

3.4 Hypertension

Hypertension is the most frequently reported health problem by the informants. Interestingly, every informant shared different experiences of using *P. bleo* to control their hypertension. For example, one of the informants mentioned that he took tips raw to control his hypertension without taking any medication. Since the amount of tips taken was not controlled, he was experiencing low blood pressure.

Another two informants practised eating seven pieces of *P. bleo* leaves to control their hypertension, and they experienced positive outcome after using it only for a few days.

Besides sharing the ideas of eating tips to control hypertension, the same informant also mentioned his experience of using *P. bleo* flower to treat hypertension by eating the fully bloomed flower.

3.5 Diabetes Mellitus

An informant shared her experience that the leaves of *P. bleo* were successfully used to treat diabetes mellitus during her pregnancy. She found that without any medication, her glucose level was controlled.

3.6 Internal problem

Informant number seven shared his experience of taking tips and stem of *P. bleo* to cure an internal problem. He mentioned that the eating of tip together with its stem was very essential to regulate body health. The informant also mentioned that shoot and stem must be taken always so as to feel healthy.

3.7 Treat Cyst

One of the informants shared her medical regimen by using a *P. bleo* brew with water to treat her cyst. She suggested to choose ten or more than ten pieces leaves, boiled leaves with water until water retained half and drink. The effect could be seen within one week.

3.8 Treat Boils

Leaves of *P. bleo* were also reported to be used by users to treat

boils. He shared the information on how to use the leaf: pounding it into paste form first and applying it on the infected area later.

4. Discussion

Findings in this study reveal that the efficacy of using the plant to treat diseases is mainly influenced by their family members and friends rather than safe in the medical knowledge that it is safe to use. Thus these findings highlight the urgency to medically confirm the safe nature of the plants by way of identifying phytoconstituents in this plant, and a detailed in-vitro experiment must also be done to confirm the safety of using this plant on human body. Besides that, from the point of view of these researchers, the herbal users also must be exposed to the knowledge about the pro and cons on the use of traditional medicine in order to increase their awareness on the need for proper use of herbal plants to avoid possible side effects caused.

From the experience shared by villagers, it can be seen that *P. bleo* showed promising effects on cancer and tumor regardless of the leaf maturity. Although this effectiveness had been evidenced by previous studies [12,31]. Lee et al. [13] claimed that there is no significant chemical constituents in *P. bleo* for treatment of cancer related diseases. These contradicting findings implied that the efficacy of *P. bleo* for treating cancer might vary based on anticancer properties of the plant, which will also be influenced by location of the plant collected. Therefore, by merely using *P. bleo* to treat cancer without knowing the factors which might influence the anticancer properties will only expose the cancer patients to the risk of delaying proper cancer treatment.

The findings from this study also showed that other plant parts of *P. bleo* are also effective for the treatment of hypertension, diabetes mellitus or boils. And these findings were not found in any other previous studies from researchers' literature review. This finding suggests that the plant may possibly contain other phytochemical constituents which need to be investigated in future studies.

One of the good signs in this study was that some of the villagers not only merely used *P. bleo*, but they also did refer to their doctors for medical checkups to double confirm the results after taking *P. bleo*. Therefore, the researchers believe that the effectiveness of the plant parts for treating certain diseases as reported in this study is a reliable source of information to guide future studies.

The findings showed that villagers were using easy preparation methods, such as eating it raw or boiling it in water. Researchers believe that, in comparison with costly modern medical methods, the methods used by the villagers (to use *P. bleo*) is encouraging, convenient, cheap and natural. This is in contrary to the study done by Kulip [14], in which it was noted that villagers started to depend on modern medicine rather than relying on herbal medicine as it was time consuming to prepare the herbs and find the plants in the forest.

5. Conclusion

From the real experience shared by the informants on the use of *P. bleo*, it can be noted that it possesses a variety medicinal values or chemical constituents which are, actually, not thoroughly explored. However, the result of the study may not generalise to the Malaysian population as a whole, due the small-scale opportunistic sampling approach used. In any future study, more respondents should be involved by widening the area of survey or inquiry.

Furthermore, it may be necessary to evaluate the safety, efficacy and quality of herbal medicines and their products through randomized, detailed clinical trial studies. Public educational

programme on the safe use of herbal medicines may be necessary as a means of minimizing their potential adverse effects on the users.

6. Acknowledgement

We express our heartfelt thanks to the people of Kampung Cherang, Kampung Bunut Susu and Kampung Banggol for their cooperation and generosity. Besides, we would like to express our gratitude thanks to Mohd Hanizam Azman, Kesvini Subramaniam, Muhammad Izwan Mohd Haris and Muhammad Shakur Amin Che Ibrahim Fikri for their assistance in collecting data.

7. Author Disclosure Statement

The authors declare that they have no competing interests.

8. Reference:

1. Yusof SF. Herbal plant around us. Ar-Risalah Product Sdn. Bhd, Selangor, Malaysia, 2010; 120.
2. Erika J, Edwards, Michael J, Donoghue.: *Pereskia* and the Origin of the Cactus Life-Form. *The American Naturalist*, 2006; 167.
3. Tan ML, Sulaiman SF, Najimuddin N, Samian MR, Tengku Muhammad TS. Methanolic extract of *Pereskia bleo* (Kunth) DC. (Cactaceae) induces apoptosis in breast carcinoma, T47-D cell line, *Journal of Ethnopharmacology*, 2005; 96: 287–294.
4. Sri Nurestri AM, Sim KS, Abdul Wahab N, Yaacob H. Cytotoxic Components of *Pereskia bleo* (Kunth) DC. (Cactaceae) Leaves. *Molecules*, 2009; 14:1713-1724.
5. Sri Nurestri AM, Abdul Wahab N, Yaacob H, Sim, KS, Hong SL, Lee GS, Rahman, SNSA. Cytotoxic activity of *Pereskia bleo* (Cactaceae) against selected human cell lines, *International Journal of Cancer Research*, 2010; 6:180-187.
6. Sim KS, Sri Nurestri AM, Norhanom AW. Phenolic content and antioxidant activity of crude and fractionated extracts of *Pereskia bleo* (Kunth) DC. (Cactaceae). *African Journal of Pharmacy and Pharmacology*, 2010; 4:193-201.
7. Hassanbaglou B, Abdul Hamid A, Roheeyati AM, Mohd Saleh N, Abdulamir AS, Khatib A, Sabu MC. Antioxidant activity of different extracts from leaves of *Pereskia bleo* (Cactaceae). *Journal of Medicinal Plants Research*, 2012; 6: 2932-2937.
8. Wahab SIA, Abdul AB, Mohan SM, Al-Zubairi AS, Elhassan MM, Ibrahim MY. Biological activities of *Pereskia bleo* extracts. *International Journal of Pharmacology*, 2009; 5: 71-75.
9. Philip K, Sri Nurestri AM, Sani W, Sim KS, Kumar S, Hong SL, Lee GS, Rahman, SNSA. Antimicrobial activity of some medicinal plants from Malaysia. *American Journal of Applied Sciences*, 2009, 6: 1613-1617.
10. Herbal & Sihat. Munsang, Perak: Poh Sdn Bhd, 2010; 102.
11. Strauss A, Corbin J. *Basics of Qualitative Research Techniques and Procedures for Developing Grounded Theory*. UK: Sage, 1998; 312.
12. Abdul M, Uyub, Ikenna N, Nwachukwu, Ahmad A, Azlan, Shaida S, Fariza. In-vitro antibacterial activity and cytotoxicity of selected medicinal plant extracts from Penang Island Malaysia on metronidazole-resistant- *Helicobacter pylori* and some pathogenic bacteria. *Ethnobotani Journal*, 2010; 8:95-160.
13. Hong HL, Er HM, Radhakrishnan AK. In vitro Anti-Proliferative and Antioxidant Activities of Stem Extracts of *Pereskia bleo* (Kunth) DC (Cactaceae). *Malaysian Journal of Science*, 2009; 28: 225-239.
14. Kulip J. An ethnobotanical survey of medicinal and other useful plants of Muruts in Sabah, Malaysia. *Teloepa*, 2003; 10: 81-98.