

Women's health and beauty care in Indonesian traditional medicine: empowerment through enablement

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1. Introduction

Indonesia is an archipelago consists of 17,000 islands; it straddles the Equator and is a strategic location along major sea – lanes from Indian Ocean to Pacific Ocean. Like in almost every part of the world, people in Indonesia have also been using herbs and other natural resources from their surroundings for medicinal purposes and its traditional medicine is known locally as “jamu”. Jamu is a complex mixture of herbs and are widely used especially in Java Island. Experts agree that the use of plants and other natural resources for medicinal purposes in Indonesia dates back to prehistoric times. An existing proof can be found in a stone relief at the famous Borobudur temple dating around AD 800 showed the kalpataruh leaf, taken from the mythological tree that never dies, and other ingredients are pounded to make a mixture for women's health and beauty care.

Knowledge on the healing properties of plants could be studied through some manuscripts written during historical times of Indonesia, where some original ones are kept in some places, such as the Surakarta and Yogyakarta Palaces in Central Java and The Indonesian National Library. Both Yogyakarta and Surakarta are sultanates and were established in 1755. Two original manuscripts on Javanese traditional medicine were kept in the Surakarta Palace library, namely *Serat Kawruh bab Jampi-Jampi* (A treatise on All Manner of Cures) and

Serat Centhini (Book of Centhini). It was known from those manuscripts that both sultanates were the place where the application of traditional medicine began. Besides, it was also known through such findings that palace as the center of culture and knowledge is a place where information on the science of medicinal plants and their formulas is kept. Women's health and beauty care is also present in the traditional medicine practice of Indonesia, as can be found in the original manuscripts. It is no longer a secret that Javanese princesses and other ladies from the noble family performed a special treatment to take care of their beauty using various formulas in different dosage forms. Therefore it is not surprising that the practice of health and beauty care, especially among Javanese and Madurese women who live in Java and Madura Islands exists. Although beauty care within the palace once was kept as a secret, ordinary people now are able to learn or imitate it. This is made possible through a better relationship between members of the noble family and ordinary people outside the palace which has opened a wider opportunity to know about the palace's secret of beauty care. Also, some ordinary people who once devoted their lives for the royal family by preparing jamu are now engaged in a different way of living by preparing and selling jamu for commercial purpose. Mooryati Soedibjo, a lady from the noble family of Surakarta Sultanate has been learning about the science of health and beauty care from her late grandfather, Sri

Susuhunan Paku Buwono X, and is publishing a book about medicinal plant based on her knowledge and experiences in running a jamu industry.

Other original manuscripts on traditional medicine written in Malay and local languages were collected by The Indonesian National Library; some of them, Usada, Tetamba, Kitab Tibb and Buku Resep, have been translated into Indonesian language.

There are many other publications on medicinal plants written in the 19th and 20th Centuries. Two books on Indonesian medicinal plants were published by Dutch researchers in 1930's. "De nuttige planten van Nederlandsch - Indie" was first published in 1913 and contains many information on the botanical names, usage, chemical contents, pharmacological actions of 500 plants of Indonesian origin. The book was translated into Indonesian language entitled "Tumbuhan Berguna Indonesia" (Useful Indonesian Plants) and at present is still considered as the most reliable source of information on Indonesian traditional medicine.

De Platen - Atlas and Indische Planten en haar Geneeskraft (The Pictorial Atlas and Indigenous Plants and their Healing Powers) were first published in 1907. Both contain many information on medicinal herbs and recipes collected by Mrs. Jans Kloppenburg - Versteegh, a Dutch woman who lived in Indonesia in the early 1900's and devoted most of her time to find useful information on herbs that grew in the surrounding area.

Like in other Asian countries, knowledge on Indonesian traditional medicine has been passed-down through generations. Today, even in areas where modern health care has been established by the government, some families prefer to use only traditional medication, while others use it as a supplement to modern medication.

2. Herbal treatment for women

In Java and Madura Islands, jamu is introduced into the life of a woman from early childhood. It usually started by giving certain herbs as an appetite stimulant to children, such as rhizomes of *Curcuma aeruginosa* Roxb. which are known locally as "temu ireng" and leaves of *Carica papaya* L. or locally called "daun pepaya." Herbs which are effective as a vermifuge are also popular and commonly applied for combating worm infestation, such as rhizomes of *Curcuma heyneana* Val. & V. Zyp. and leaves of *Carica papaya* L.

A more intensive interdependency between a woman and herbal medicine begins from the early onset of puberty. Some traditional ceremonies are held to congratulate and welcome her, and also to inform all of the relatives. Another evidence to show that puberty has been considered for a long time as an important stage in the life of a girl is the application of various herbal medicine for health purpose. The pattern of using herbal medicine which has been started in this period is expected to be conducted on a regular basis and becomes part of the daily routine of a woman throughout their life. There are 2 kinds of jamu formulas for internal use which should be consumed on a regular basis, and are popularly known as "galian remaja puteri" and "kunyit asam". Although the ingredients varied from place to place, "galian remaja puteri" (or also named "galian singset") generally composed of some ingredients which are especially useful for promoting regular menstruation, curing excessive leukorrheal discharge, eliminating foul body odor, indigestion or other stomach problems, respiratory disorders, keeping warm body temperature. An astringent is always present in such formulation, which is particularly effective for tightening muscles of women's reproductive organ (Table 1). Excessive leukorrheal discharge is a change in the consistency or amount of a whitish viscid discharge from the vagina which may be

signs of a vaginal or uterine infection or other gynaecological disorders.

Hair and skin care using various kinds of poultices and paste for external uses regularly also begins at puberty.

Marriage is the next important step within a woman's life, and therefore a rather complicated and time consuming preparation prior to the weddings is needed. As part of the existing culture, a bride-to-be is expected to be in a good health and therefore must undergo various herbal treatments which have tremendous actions and potency on different body organs. Such treatments are more complicated than the daily care and basically are carried – out for 40 days. A special emphasize is given to the application of selective herbs which are useful for the reduction of sweat, elimination of foul body odor, treatment of excessive leukorrheal discharge, also as a tonic and aphrodisiac. An example is a formula composed of rhizomes of *Boesenbergia pandurata* Roxb., rhizomes of *Curcuma domestica* Val., galls of *Rhus semialata* Murr., dried fruits of *Foeniculum vulgare* Mill. and bark of *Alyxia reinwardtii* Bl. Skin and hair care is the most important part in the treatment, since a bride-to-be is expected to have healthier skin and hair. Seven days prior to the wedding day, the bride-to-be must undergo a perfumed steam bath with a special traditional incense composed of some aromatic ingredients. For this purpose, a floral bathing with special floral water made of various fragrant flowers and leaves, such as rose, jasmine, and pandanus, is performed prior to the steam bathing of all parts of the body, including hair and women's organ. It is believed that the aromatic vapor emerged from the burnt incense can help in eliminating foul body odor, preventing and curing excessive leukorrheal discharge, treating dandruff and perfuming skin. Some other programs, such as diet, exercise and meditation are

included in the treatment which can help them to control emotion and nervousness.

Most married women are expecting children and hence a special herbal formula is prepared, which according to practitioners is effective in increasing fertility in women who are trying to conceive. An example is a formula composed of leaves of *Piper betle* L. and rhizomes of *Curcuma domestica* Val. Pregnancy is an important step and demands a serious attention from an expectant mother. Generally, Indonesian women rely on the effectiveness of some special herbal formulas which are beneficial for their general health and facilitate a proper development of fetuses. There are various kinds of formulas and each is taken on a certain period, such as the third, seven and eight month of pregnancy. A special formula taken during labor is believed to be able to help in the expulsion of placenta. Besides, there is also a formula for easing painful during labor.



Fig. 1

A display of Madurese traditional medicine formulas for post natal care

Concern for a full recovery after parturition is always growing among most Indonesian women. In this case, a full recovery does not only mean a quick recovery of the reproductive organ, but also ability to be back in a good shape, free of excessive fat, have toned vaginal muscle, have smooth and delicate skin. Post natal care

with herbal formula is popular and widely used in Indonesia; infact it plays an important role in Indonesian traditional medicine practice, especially in Java and Madura.

A complicated traditional medicine for pregnancy and post natal care is presented in the original manuscript collected by Balai Pustaka. There are 9 different types of medicines and each consists of various formulas for internal and external applications in decoction, poultice and powdered dosage forms. Generally, each type has some formulas for immediate use after parturition, several days (1, 2, 3,4, 5, 6, 7, 10, 15, 20, 25) up to 40 days after parturition and 40 days onward. A special formula, known locally as “jamu peluntur” is also present; it is very popular and used after parturition to help in the removal of blood remains in the uterus (Table 2).

Herbal formulas used internally and topically to stimulate the flow of mother’s milk are also present.

Topical dosage forms vary and each has a local name, such as “parem” for a liniment, “pilis” for a special poultice applied on the forehead and temples, “tapel” for a poultice applied on the abdomen, “bedak badan” for body talc, “bedak kaki” for legs. Almost all formulas do not have adequate information on their modes of application, doses and activities.

Post natal care with a special poultice made from a mixture of lime and Cajeput or Eucalyptus oil is found elsewhere throughout the country. It has warming property and hence is effective for the recovery of womb. The poultice is rubbed on the stomach and the stomach is then covered and bound tightly with a 5- to 20- meter long cloth to help tightening the overstretched skin of the stomach.

The long and complicated post natal care which lasts 35-40 days is followed by a regular effort for health maintenance, control fertility and birth control. For this

purpose, generally married women consume a special formulation known locally as “jamu galian wanita” on a regular basis up to menopause. It comprises of different kinds of herbs with distinct effects which facilitate the proper functioning of all organs in the body. For example, “jamu galian wanita” or “jamu sehat wanita” from Madura usually is useful for curing indigestion which causes loss of appetite, keeping body temperature which is necessary for eliminating fatigue, preventing from microbial infections, alleviating rheumatic pain, maintaining muscle tone (Table 3). A special formula for the prevention of conception is generally composed of various herbs with hot or pungent properties.

3. Popular herbs

Various formulas for women’s health and beauty care in Indonesian traditional medicine contain popular herbs able to exert special activities, and hence have attracted researchers to conduct further scientific researches about the many various uses and benefits in order to give scientific basis to their applications. Some of them are rhizomes from Zingiberaceae family, flowers of *Nyctanthes arbor-tristis* L., leaves of *Piper betle* L., fruit peels of *Punica granatum* L., stem bark of *Parameria laevigata* (A.L.) Juss

Almost all rhizomes from Zingiberaceae family (ginger family) are very popular and use widely in a large number of formulas. Three to five different rhizomes are frequently added in one formula, such as in a formula comprised of “kencur” (*Kaempferia galanga* L.), “bangle” (*Zingiber purpureum* Roxb.), “temulawak” (*Curcuma xanthorrhiza* Roxb.), “lempuyang” (*Zingiber Americans* Bl.), “kunir” (*Curcuma domestica* Val.), juice of “temu kunci” and “kunyit”, “bawang puti” (garlic), “asem kawak”(*Tamarindus indica* L.), “sintok” (*Cinnamomum sintok* Bl.), “kaningar” (*Cinnamomum burmani*

Table 1. Jamu galian remaja putri

Usage : promote regular menstruation, cure excessive leukorrheal discharge, eliminate foul body odor, cure indigestion or other stomach problems.

No.	Local name (plant origin)	Scientific name	Family	Part used
1.	jokeling	<i>Terminalia chebula</i> Retz.	Combretaceae	fruit
2.	ketumbar	<i>Coriandrum sativum</i> L.	Apiaceae	fruit
3.	majikan	<i>Quercus infectoria</i> Oliv.	Fagaceae	gall
4.	kunci	<i>Boesenbergia pandurata</i> Roxb.	Zingiberaceae	rhizome
5.	temulawak	<i>Curcuma xanthorrhiza</i> Bl.	Zingiberaceae	rhizome
6.	keningar	<i>Cinnamomum burmani</i> (Nees.) Bl.	Lauraceae	bark
7.	jahe	<i>Zingiber officinale</i> Rosc.	Zingiberaceae	rhizome
8.	trawas	<i>Litsea odorifera</i> Val.	Lauraceae	leaf
9.	masoyi	<i>Massoia aromatica</i> Becc.	Lauraceae	bark
10.	kayu rapat	<i>Parameria laevigata</i> (A.L.) Juss.	Apocynaceae	bark
11.	kencur	<i>Kaempferia galanga</i> L.	Zingiberaceae	rhizome
12.	kunyit	<i>Curcuma domestica</i> Val.	Zingiberaceae	rhizome

Table 2. Jamu peluntur

Usage : enhance the removal of blood remains in the uterus after parturition.

No.	Local name (plant origin)	Scientific name	Family	Part used
1.	kencur	<i>Kaempferia galanga</i> L.	Zingiberaceae	rhizome
2.	bangle	<i>Zingiber purpureum</i> Roxb.	Zingiberaceae	rhizome
3.	adas	<i>Foeniculum vulgare</i> Mill.	Apiaceae	fruit
4.	palasari	<i>Alyxia reinwardtii</i> Bl.	Apocynaceae	bark
5.	kunir	<i>Curcuma domestica</i> Val.	Zingiberaceae	rhizome
6.	bawang puti	<i>Allium sativum</i> L.	Amaryllidaceae	bulb
7.	kayu anyang	<i>Elaeocarpus grandiflora</i> Smith.	Elaeocarpaceae	seed
8.	sintok	<i>Cinnamomum sintok</i> Bl.	Lauraceae	bark
9.	kaningar	<i>Cinnamomum burmani</i> (Nees.) Bl.	Lauraceae	bark
10.	seprantu	<i>Sindora sumatrana</i> Miq.	Caesalpiniaceae	fruit
11.	masoi	<i>Massoia aromatica</i> Becc.	Lauraceae	bark
12.	kayu legi	<i>Glycyrrhiza glabra</i> L.	Papilionaceae	root
13.	laos	<i>Alpinia galanga</i> (L.) Swartz.	Zingiberaceae	rhizome
14.	daringo	<i>Acorus calamus</i> L.	Araceae	rhizome
15.	blimbing wuluh	<i>Averrhoa bilimbi</i> L.	Oxalidaceae	leaf
16.	nanas	<i>Ananas comosus</i> (L.) Merr.	Bromeliaceae	leaf
17.	pace	<i>Morinda citrifolia</i> L.	Rubiaceae	fruit
18.	temulawak	<i>Curcuma xanthorrhiza</i> Roxb.	Zingiberaceae	rhizome
19.	jinten hitam	<i>Nigella sativa</i> L.	Ranunculaceae	seed

Table 3. Jamu sehat wanita

Usage : indigestion , keep warm body temperature, prevent microbial infections, alleviate rheumatic pain, maintain muscle tone.

No.	Local name (plant origin)	Scientific name	Family	Part used
1.	laos	<i>Alpinia galanga</i> (L.) Swartz.	Zingiberaceae	rhizome
2.	jinten hitam	<i>Nigella sativa</i> L.	Ranunculaceae	seed
3.	kemukus	<i>Piper cubeba</i> L.	Piperaceae	fruit
4.	adas	<i>Foeniculum vulgare</i> L.	Apiaceae	fruit
5.	palasari	<i>Alyxia reinwardtii</i> Bl.	Apocynaceae	bark
6.	kedawung	<i>Parkia roxburghii</i> G. Don.	Mimosaceae	seed
7.	kunyit	<i>Curcuma domestica</i> Val.	Zingiberaceae	rhizome
8.	masoyi	<i>Massoia aromatica</i> Becc.	Lauraceae	bark
9.	cengkih	<i>Syzigium aromaticum</i> L.	Myrtaceae	flower bud
10.	trawas	<i>Litsea odorifera</i> Val.	Lauraceae	leaf
11.	jahe	<i>Zingiber officinale</i> Rosc.	Zingiberaceae	rhizome
12.	ketumbar	<i>Coriandrum sativum</i> L.	Apiaceae	fruit
13.	secang	<i>Caesalpinia sappan</i> L.	Caesalpinaceae	wood
14.	kayu angin	<i>Usnea barbata</i> Fries.	Usneaceae	thallus
15.	kayu manis	<i>Cinnamomum burmani</i> (Nees.) Bl.	Lauraceae	bark
16.	jokeling	<i>Terminalia chebula</i> Retz.	Combretaceae	resin
17.	pala	<i>Myristica fragrans</i> Houtt.	Myristicaceae	seed
18.	kapulaga	<i>Amomum cardamomum</i> Wild.	Zingiberaceae	fruit
19.	temulawak	<i>Curcuma xanthorrhiza</i> Roxb.	Zingiberaceae	rhizome
20.	cangkok	<i>Mesua ferrea</i> Linn.	Guttiferae	flower
21.	merica hitam	<i>Piper nigrum</i> Linn.	Piperaceae	fruit
22.	kayu anyang	<i>Elaeocarpus grandiflora</i> Smith.	Elaeocarpaceae	seed
23.	jolawe	<i>Terminalia belerica</i> Roxb.	Combretaceae	fruit
24.	cabe jamu	<i>Piper retrofractum</i> Vahl.	Piperaceae	fruit



Fig. 2

Rhizome of *Alpinia galanga* (L.)
Swarzt.

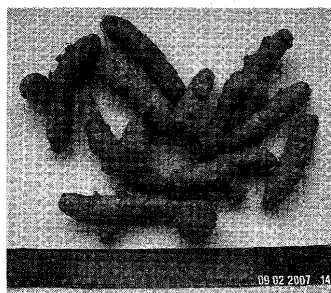


Fig. 3

Rhizome of *Curcuma domestica* Val.

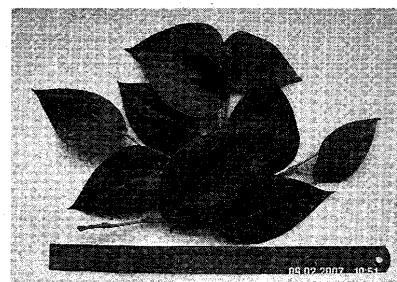


Fig. 4

Leaves of *Piper betle* Linn.

(Nees.) Bl.), “seprantu” (*Sindora sumatrana* Miq.), “masoi” (*Massoia aromatica* Becc.) for post natal care following the release of umbilical cord remains of newborn babies. Eventhough the health benefits of the formula is not clearly mentioned, but empirically such formula is beneficial for keeping the body temperature, preventing bacterial infections and other disorders of vital organs. Most of the rhizomes grow well throughout Indonesia, while some others grow better in certain areas.

The rhizome of *Curcuma domestica* Val., locally known as “kunyit” (Fig.3), is an ingredient of “jamu kunyit asam” together with pulp of tamarind fruit. Javanese girls usually drink the concoction a few days before the onset of menstruation against menstrual disorders and symptoms frequently appearing during menstruation. The tamarind pulp used in this formula is specially prepared in a traditional way from ripe fruits and is named “asem kawak.” The pulp is steamed for a few minutes after removing the seeds and the cooked pulp is then kept in a dry container and is ready for food and medicinal uses. Diluted “asem kawak” is used traditionally as an abortivum and this probably could explain its use in jamu “kunyit asem.”

A research has been conducted to examine the antioxidant capacities of some major phenolic compounds of *Tamarindus indica* L. and results indicated that

tamarind may be an important source of cancer chemopreventive natural products. Scientific researches have been conducted to find the pharmaceutical activities of *Curcuma domestica* Val. rhizomes and results showed its anticancer, dermatitis, inflammation, high cholesterol levels and dyspeptic conditions properties which could justify its use in traditional medicine formulations. “Temugiring,” the local name of *Curcuma heyneana* Val. & V. Zyp., is a rhizome from the ginger family and widely used as an anthelmintic for children. Some researches have been shown the in vitro effects of juice and infuse from grated rhizome of *Curcuma heyneana* on *Ascaris* sp. in destroying the worms. It is popularly used as an immune enhancer in some formulas for a bride-to-be.

“Laos”, the local name of *Alpinia galanga* (L.) Swarzt., is a member of ginger family and has a distinct application in Indonesian traditional medicine (Fig. 2). Its rhizome is used immediately after labor and for this purpose, grated rhizomes wrapped in a banana leaf are heated and put inside a pair of preheated coconut shells. Then the treated person is seated on the warm coconut shells for a few minutes and is allowed to stand up when the shells are no longer warm. Such treatment, which is conducted once a day after a morning shower followed by drinking a glass of “jamu laos,” is useful to enhance the recovery of the uterus and prevent microbial infections. A

fresh rhizome yields about 0.1% of essential oil with cineole as the main component. Its effectiveness is supported by a study on its biological activities which revealed antibacterial, antifungal, antiprotozoal and expectorant activities. "Jamu laos" is a famous concoction made of a combination of "laos" with garlic, fruit of *Cuminum cyminum* L., seeds of *Nigella sativa* L., fruits of *Piper cubeba* L., seeds of *Brassica rugosa* Prain, fruits of *Foeniculum vulgare* L., stem bark of *Alyxia reinwardtii* Bl., roots of *Glycyrrhiza glabra* L., seeds of *Parkia roxburghii* G.Don., seeds of *Carum copticum* (L.) Benth., rhizomes of *Kaempferia galanga* L. It is for immediate use after labor and proved to be effective against stomach discomfort, menstrual irregularity, dysmenorrhea, excessive leukorrheal discharge, and promote uterine cleansing. It is very interesting to note, that all formulas for immediate use after parturition in the original manuscript collected by Balai Pustaka use "laos" as their main ingredient.

Leaves of *Piper betle* L. (Fig. 4) combined with rhizomes of *Kaempferia rotunda* L. in jamu "sirih kunci" (sirih = *Piper betle*, kunci = *Kaempferia rotunda*) is widely used as a vaginal wash to treat excessive leukorrheal discharge. This is the most frightening symptom of all among Javanese and Madurese married women as they believe it will cause a serious problem in their sexual relationship. To avoid the symptom, there are a variety of natural herbal remedies in a different kind of dosage forms and generally contain betle leaves as one of the ingredients. Betle leaves contain betel oil composed of chavicol, estragole, eugenol, methyl eugenol and hydroxycatechol. Chavicol gives a specific aroma to the leaves and has a strong antibacterial activity. Rhizomes of *Kaempferia galanga* L. also contain an essential oil which is effective as antibacterial, hence a combination with betle leaves will enhance its antibacterial activity and

explain the benefits of their use as a vaginal wash. Betle leaves are also present in some post natal care formulas for internal use.

Another important application of betle leaves, especially among Javanese women, is in betle quid chewing. Betle quid chewing as a social and cultural practice is actually popular in many parts of Asia. In some parts of Java Island (Indonesia) the leaves are commonly chewed together with mineral lime (calcium oxide) and areca nuts. An interesting example is the betle chewing practice among women from Osing tribe in East Java which starts from their marriage and will continue throughout their lives just like smoking. Most of them believe that chewing betle leaves can help maintaining body weight and refraining from food cravings. Areca nuts contain the alkaloid arecoline which promotes salivation and the saliva is stained red. Chewing the leaves together with lime and areca nuts is believed to be effective as a stimulant of the central nervous system and digestive tract. A review of betel quid chewing in China reported oral diseases associated with betel quid chewing which include oral submucous fibrosis, oral leukoplakia and oral cancer. Therefore, as the habit seems to differ between geographic areas, it is necessary to conduct a study to evaluate its risk for oral cancer and other associated oral mucosal diseases.



Fig. 5

Bark of *Parameria laevigata* (A.L.) Juss.

“Srigading”, the local name of *Nyctanthes arbor-tristis* L., is another herb which flowers and leaves are famous of their effectiveness in inducing or hastening menstrual flow especially for young girls during puberty. An *in vitro* study to investigate the effect of infuses of leaves (5% and 10%) and flowers (0.5%) on the contraction of uterine smooth muscle in rabbit showed an increase in the amplitude of the contraction.

Punica granatum L. and *Parameria laevigata* (A.L.) Juss are two important herbs frequently include in the formulas for women’s health. The bark of *Parameria laevigata* (Fig. 5), known locally as “kayu rapat” is used since long time ago. According to Heyne, K. (1987), it is used for its effect to make the uterus shrink and curing other internal organs. Until now very little is known about the phytochemistry and pharmacology of the bark nor have its traditional uses been confirmed by investigations, but its efficacy has been proven empirically and thus is still being consumed vastly in jamu “galian rapat” or “sari rapat.” It is a formula for married women which is useful for reducing excessive leukorrheal discharge, toning vaginal muscle, eliminating foul odour and itches in the vagina caused by infections. In Madurese traditional medicine practice, “jamu sari rapat” for post natal care is the most popular of all and “rapat” is actually a local word which literally means tight. According to consumers, this formula has a distinct effect as a muscle tightening of the reproductive organ, including vagina. They believe that the tightening effect is exerted by some constituents in the formula which reduce the secretion of vaginal mucous and this condition is necessary for a satisfactory sexual intercourse.

Besides “kayu rapat”, other ingredients with astringent and antibacterial properties are found in the formulas so as to enhance the effect of “kayu rapat,” such as rhizomes of *Boesenbergia pandurata* Roxb., rhizomes

of *Kaempferia angustifolia* Roscoe., fruits of *Areca catechu* L., rhizomes of *Curcuma domestica* Val., fruit peels of *Punica granatum* L., leaves of *Piper betle* L. (Table 3). *Punica granatum* L. is the scientific name of pomegranate, and is locally called “delima”. The fruit rind is rich in tannin and popularly used as the main ingredient in many formulas for the treatment of excessive leukorrheal discharge. An example is a combination of fresh fruit rind with fresh leaves of *Pluchea indica* L. and the aerial part of *Elephantopus scaber* L. which have the same effectivity. *Pluchea indica* L. is also effective against foul body odour.

Another “jamu sari rapat” from Madura consists of fruit pulp of *Terminalia arborea* K. & V. and galls of *Quercus infectoria* Oliv. The insect galls of *Quercus infectoria* Oliv. are rich in resins and tannic acid; it has a strong astringent property and is used traditionally in the treatment of haemorrhage, chronic diarrhea, menstrual disorders, excessive leukorrheal discharge. Tannins contract the tissues of the body and draw the tissues closer together and improve their resistance to infections. A study on the methanol extract of the galls showed a high anti-diarrheic effectivity. Heyne K. (1987), in his book mentioned the effectivity of the fruit of *Terminalia arborea* K. & V., known locally as “jaha keling,” against excessive leukorrheal discharge. Eventhough scientific investigation on its pharmacological effects is very limited, but it is known that trees of this genus are known especially as a source of secondary metabolites, e.g. cyclic triterpenes and their derivatives, flavonoids, tannins and other aromatics. Some of these substances have antifungal, antibacterial, anti-cancer and hepatoprotective indications. A mixture of fruits of *Terminalia arborea* K. & V., bark of *Parameria laevigata* (A.L.) Juss., rhizomes of *Boesenbergia pandurata* Roxb., and fruit bark of *Punica granatum* L. are commonly applied as an

astringent, for treating excessive leukorrheal discharge, enhancing the wound recovery of the uterus and making the uterus to shrink.

Herbs used traditionally as aphrodisiac for women is of interest. One of the most famous aphrodisiac of all is patma, the local name of *Rafflesia patma* Bl. Its young flower bud is known locally as padmasari and an infusion of it is a good aphrodisiac for women. It is believed that all parts of the plant have astringent property and thus can be used after childbirth to purify uterus and stop bleeding.

Some herbs are popular for their lactagogue property. Nursing mothers are frequently making some efforts to maintain or enhance their milk secretion using some herbs. For this purpose, a popular formula, locally called "jamu gepyokan," or "uyup – uyup," or "wejah," is taken every morning by a nursing mother. It is composed of rhizomes of *Curcuma domestica* Val. as a stomachic, *Curcuma xanthorrhiza* Roxb. as a galactagogue, *Curcuma aeruginosa* Roxb. as a stomachic and appetite stimulant, young leaves of tamarind, young leaves of *Carica papaya* L. which contain a bitter alkaloid papain that digests protein and is used to aid in digestion, leaves of *Orthosiphon stamineus* Benth. as a diuretic and leaves of *Psidium guajava* L. as an antidiarrhoea which prevent babies from diarrhea. The rhizomes of *Curcuma xanthorrhiza* Roxb. have long been used traditionally as a galactagogue.

Katu, the local name of *Sauropus androgynus* (L.) Merr. (Fig. 6), is a popular herb and the leaves are eaten raw as vegetable by nursing mothers to enhance breast milk secretion. It grows well and is cultivated as living fences or in the home gardens; the leaves are sold in traditional markets especially in West Java. A research on the isolation and lactagogue activity of the active compounds in lactating rats found a steroidal compound which has been proved its effectiveness in increasing the

number of alveolar cells of the mammary glands of lactating rats.



Fig. 6

Sauropus androgynus (L.) Merr.

4. Traditional cosmetics

Nowadays we still can see and learn about the complicated daily practice of skin care among Madurese woman using herbal-based cosmetics. The practice usually starts with the application of a body peeling before taking a bath, a skin scrub lotion while taking a bath and a face powder after taking a bath. All of the products are in powdered forms and comprised of various natural ingredients which are effective for improving blood circulation, preventing from bacterial infections, treating itches, removing traces of impurities and as a perfume. The rhizome of *Curcuma heyneana* Val. & V.Zyp. is widely used in various skin care products; besides essential oils, it also contains a yellow pigment curcumin which gives the skin a golden glow and is frequently used in traditional cosmetics for the prevention of aging. Study on the free radical scavenging and antioxidant properties showed that the dichloromethane and methanol extracts of the rhizomes exhibited several compounds with free radical scavenging and antioxidant properties and this probably could explain its application in the traditional medicine formulations.

Some fragrant herbs which are often used in skin care products to give the skin a pleasant odour, are roots of *Rheum palmatum* L., bark of *Alyxia reinwardtii* Bl., wood of *Santalum album* L., bark of *Massoia aromatica* Becc., leaves of *Vitex trifolia* L. It is interesting to note that actually the basic ingredient of almost all face powders and skin scrubs are tendered rice. It contains starches which are effective in absorbing impurities and therefore is always used as the main ingredients in a traditional face powder locally known as “bedak dingin.” Women who live in some heavily air – polluted areas always apply “bedak dingin” on their face and whole body as an effective way to clean their skin.

Javanese women apply a popular body peeling powder called “lulur” or “mangir” for skin care regularly. It contains a mixture of tendered rice with other ingredients such as rhizomes of turmeric and *Curcuma aeruginosa* Roxb. Both rhizomes contain curcumin to give the skin a lighter color. *Pandanus* and *Murraya paniculata* Jack. leaves are also included in the mixture. “Lulur” could help in removing dead skin cells and replacing them with new ones, stimulating blood circulation, smoothing the skin and giving a pleasant aromatic odor to the skin.

Hair care is conducted traditionally for some purposes, such as prevention and treatment of hair loss, stimulation of hair growth, prevention of gray hair. Some famous herbs for hair care are *Aloe vera* gel, *Eclipta alba* leaves and *Nothopanax scutellarium* leaves. The leaf of *Eclipta alba* (L.) Hassk., locally known as “urang- aring”, has been used for a long time to stimulate hair growth and keep the hair black. It is prepared by crushing the leaves with water and the juice obtained is used to rinse hair or also rubbed on the scalp of a newborn baby to stimulate hair growth. The leaf of *Nothopanax scutellarium* Merr., locally known as “daun mangkokan,” is pounded to make a paste which is rubbed on the head scalp to reduce hair

loss. Javanese women apply a traditional hair oil, locally called “cemceman,” made of coconut oil with pandanus, “urang-arang” and mangkokan leaves, Cananga flowers, *Citrus hystrix* leaves. *Aloe vera* gel is also applied on the head scalp for the same purpose. A certain amount of black tea is left overnight and rubbed the following morning on the scalp to avoid hair loss. Sap yielded from the stem cutting of a local banana plant, namely “pisang kepok” is applied on the scalp with light massage as a hair tonic especially after childbirth. So far, the effectiveness of all of the herbs remains unclear and is not supported by scientific evidence.

5. Combining herbs

Almost every formula in Indonesian traditional medicine practice is a mixture of a number of herbs and it is not surprising to find a formula composed of more than 15 ingredients of plant origin. The hand-written



Fig. 7

Madurese skin care products made by a small-scale jamu maker

information on jamu and medicinal plants has been kept in families for a long time. Generally women prepare the formulation by themselves at their home. Most of them inherited the skill of preparing the medicine from their previous generation, from selecting raw materials, usages, methods of preparation of various forms, such as powder,

juice, teas, decoctions and infusions. It is not difficult to find fresh ingredients from local markets or in the home gardens and hence jamu can still be prepared fresh. Almost all herbal ingredients have their own local names and most consumers recognize some of the popular ones and can identify each ingredient simply through examining physical characteristics such as color, taste and aroma. As preparing traditional medicine has been part of their daily chores, their ability in compounding herbs is just like preparing food in the kitchen. It is said that exact measurements are not necessary because preparing jamu is rather like cooking, an "art" that put emphasis on judging what is likely to taste good. Hence, they never use any special measuring tools in preparing the formulation, and just measure each ingredient by using easy terms such as handful (local: "segenggam"), fingers (local: "sejumpat") and thumbs (local: "sejari"). Some traditional medicine makers, who have been making and selling certain products for many years, still rely on such ways for measuring ingredients. Ibu Issa, a 70-year old blind woman, for example, only relies on a simple way for measuring raw ingredients. Based on her experiences in making various herbal medicines, she instinctively knows almost exactly the amounts of each ingredient needed.

Methods of preparation are simple and the traditional tools are still available in many Javanese houses such as lumpang (small iron mortar), pipisan, parut (grater), kualu (clay pot). Juice is prepared by grinding the raw materials with a grinding stone, squeezed the mixture with a piece of cloth and strained. A decoction is prepared on a special clay pot by heating the mixture of raw materials in water until the water is reduced to a certain amount. Skin care products, such as scrub and mask paste, which use tender rice as one of their ingredients, are made by pounding all ingredients to make dough by adding a small amount of water. The

dough is then cut in slices and made into small round granules before sun-dried them.

Eventhough various formulas are familiar among women, their knowledge on the properties and medical characteristic of individual herbs are very limited. All raw materials are handling on a similar way after harvest, ignoring possible damages or loss of constituents. For example, they are not aware that prolong sun-drying of the rhizomes from Zingiberaceae family can lead to loss of essential oil contents. They also know very little information about the combined effect of ingredients mixed together in herbal formulations and how to select a proper formulation for treating a certain kind of illness. Hence, certain formulas are taken inappropriately as a result of misunderstanding on their main effects, as in the case of "jamu sari rapat." The only reason that a woman will definitely take "jamu sari rapat" against excessive leukorrheal discharge is because such symptom can worsen their sexual relationship with their husbands. As a consequence, married women are encouraged to consume it as often as possible in an attempt to have a tighter



Fig. 8

Simple tools for preparing jamu

vaginal muscle, without even aware that vaginal discharge is normal for a woman and leukorrhea is a sign that the vagina is healthy and keeping clean. Treatment is only needed if there is a change in discharge caused by

infection, malignancy and hormonal changes. Such wrong application on the contrary will produce a serious damage on the overall health of a woman.

The Indonesian Government now has a great concern over the practice of traditional medicine in the community for health care, and gives emphasize to the importance of using standardized herbs and extracts, and reducing the number of herbs in a formula of traditional medicine.

6. Conclusions and considerations

It is interesting to learn from the post natal care in the original manuscripts that all formulas are designed to help women regain their overall health condition after giving birth so as to make them healthy, beautiful and energetic. In fact, a priority is given for post natal care in Javanese traditional medicine and hence, by understanding various formulations and their usages, women are expected to give a serious attention to their general health conditions throughout their lives, from the beginning of puberty to menopause. The results are truly amazing as it can be seen that even married women who live in remote areas with inadequate health-care facilities are healthy and strong enough to take care of their families. But, even though women, especially who live in remote areas, rely on the effectiveness of jamu for health maintenance, their knowledge are limited and therefore efforts should be done to educate them the right and proper way in preparing jamu, which include selection of herbs, formulation, usages and methods of preparation.

There is no doubt that in the Indonesian traditional medicine practice, women are obliged to taking care of their health using traditional medicine regularly. Thus, the message is that a woman should be healthy enough in order to be able to raise and educate her children.

Health and beauty care in the Indonesian traditional

medicine practice, either for maintaining physical fitness and health or curing various kinds of illness, can be considered as indigenous knowledge that has been proven to be effective empirically. Therefore, efforts to give a scientific validation to its efficacy should be given. Like any other knowledge, indigenous knowledge needs to be constantly used, challenged and further adapted to the evolving local contexts. Such efforts have to be conducted carefully through a complete understanding on the philosophy of the practice itself. As with other traditional medicine system from other Asian countries, the Indonesian traditional medicine is based on a philosophy which says that processes of the human body are interrelated and constantly interacted with the environment. Therefore the practice looks for the signs of disharmony in the external and internal environment of a person in order to understand, treat and prevent illness and disease. According to the concept, the practice of using a medicine for a certain kind of illness is always carried out together with a certain change, such as in life style and proper diet, in order to balance a disharmony and to achieve a maximum result. So, efforts to bring any change in indigenous knowledge, such as in the formula of a traditional medicine, is not easy and should be carefully reconsidered or designed in a wise manner to avoid any misinterpretation and mistakes. It is hoped that such effort could integrates indigenous knowledge practice into local, national, regional or even global development for women's health – care.

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