

## ORIGINAL ARTICLES

### Use of Gemstones for Preventive and Curative Purposes: a Survey among the Traditional Medicinal Practitioners of the Bede Community of Bangladesh

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#### ABSTRACT

The Bedes of Bangladesh (also known as the river gypsies or the boat people) are an ancient community, and who by their claim has been living in the country since about 700 AD. They are not settled in any given area of the country, but scattered in individual communities, who reside in boats in various parts of the country. They travel to various villages besides the numerous rivers of Bangladesh by boats throughout the year, where they ply their various professions of administering traditional medicine, selling sundry items, performing various magic tricks and jugglery acts, catching snakes, and showing various performances like snake and monkey dancing. The Bedes have their own form of traditional medicine, where they use plant and animal products as well as gemstones, amulets and incantations for cure of diverse ailments. In recent years, the Government has been trying to settle the Bede community on permanent tracts of land by the rivers. One such group of the Bedes has settled by the Bangshi River in Savar area of Dhaka district, Bangladesh. The objective of the present study was to conduct a survey among the Bede traditional healers to document their use of gemstones for both treatment and prevention of ailments including physical sickness as well as psychosomatic disorders. Interviews were conducted of the Bede traditional medicine practitioners with the help of a semi-structured questionnaire. Gemstones used by the Bede practitioners were bought from them and identified by reputable jewelers of Dhaka city, Bangladesh. A total of 29 varieties of stones were found to be used by the Bede healers for both prevention and treatment of various physical and mental disorders, including prevention from things, which can give rise to financial distresses or mental ill-being, which in turn may lead to actual physical or mental disorders. Twenty two stones were used for prevention and treatment of physical disorders or mental stresses; 18 stones had uses like to keep temperament cool, to do well in business, to fulfill desires, or to prevent evil happenings. The latter group of uses was according to the Bede traditional healers to prevent mental stress from occurring in persons, which stress can lead to actually causing the person to fall sick physically or mentally. The various stones used included ruby, sapphire, emerald, topaz, amethyst, coral, pearl, hessonite, carnelian, tiger's eye, moonstone, and six other unidentified stones. Two of the stones, namely shorpomoni pathor and shilajit pathor were really not gemstones, the first being derived from underneath the molars of snakes, and the second being actually a piece of rock, which are collected from the Himalayan region of India. Pearl and coral also cannot be called stones, both being derived from aquatic life forms, but are considered as gemstones because of their hard nature and expensive prices. Stones, particularly gemstones, have been prized by human beings from time immemorial for their luster as well as their presumed healing properties and the ability to bring good luck, if worn properly. It remains to be seen whether such traditional medicinal uses can be validated by modern science.

**Key words:** Gemstones, gem therapy, traditional medicine, Bedes, Bangladesh

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## Introduction

Bangladesh has a number of indigenous communities or tribes, who are settled in various regions of the country. Apart from one such community, the rest of the communities are land-based and even though they may move from place to place with time, their main habitat is in homes constructed on land. The sole exception is the Bede community. Also known as the 'river gypsies' or the 'boat people', the Bede people live on boats throughout the year. Bangladesh has numerous rivers and the Bede people in their boats travel throughout the year and visits various villages, which lie by the riversides. They stay for a few days by such villages and earn a living by administering their traditional medicines, selling sundry items, performing various acts of magic and jugglery, and by showing various acts with animals like snake and monkey dances. They are also very efficient in cupping in which an incision is made with the sharp tooth of the Cankilla fish (*Esox cancula* Hamilton, Family: Belontiidae) and blood drawn through the incision with the sawed-out tip of a cow horn. This is believed by the Bede practitioners to draw out 'bad blood' or poisonous blood from persons, who sick and whose sicknesses are attributed to their blood are being 'bad' or 'poisoned'.

Very little anthropological or other information is available about the Bede community, partly because of their nomadic existence, and partly because the community as a whole is mostly distrustful of strangers (Marma, 2009; Laizu, 2011). Although their traditional medicinal practices have existed for centuries, these practices are yet to be documented. In recent years, the Government of Bangladesh has been trying to settle the scattered Bede people in various places by the sides of rivers to get an accurate estimate of their population and to provide educational and health services to the people. Some success has been obtained and one such community of about 12,000 people has been settled by the Bangshi River in Porabari village of Savar area in Dhaka district of the country. Savar is on the outskirts of Dhaka and as a result, the Bede people who have settled in the area are fast adopting the lifestyle of the mainstream population. Although they have not totally given up on their nomadic ways, they now own permanent homes and are even adopting to household electrical appliances and sending their children and youth for studies in various schools, colleges and Universities of the country. As a result, both traditional lifestyle and traditional knowledge is on the verge of disappearing and will probably do so within the next few years unless rapidly documented.

We have been conducting ethnomedicinal surveys among both mainstream traditional medicinal practitioners and tribal medicinal practitioners of the various regions of the country for the last few years (Nawaz *et al.*, 2009; Rahmatullah *et al.*, 2009a-c; Hasan *et al.*, 2010; Hossain *et al.*, 2010; Mollik *et al.*, 2010a,b; Rahmatullah *et al.*, 2010a-g; Jahan *et al.*, 2011). During these ethnomedicinal surveys it was observed that the mainstream traditional medicinal practitioners as represented by the folk medicinal practitioners and the tribal medicinal practitioners rely mostly on medicinal plants for treatment of ailments. Medicinal plants were also observed to be used by them for prevention of certain ailments from occurring. During an ethnomedicinal survey of the Bede medicinal practitioners of Porabari village, it was observed that although the majority of practitioners used medicinal plants for both curative and preventive purposes, certain practitioners used other elements in the form of animal, bird, gastropod, reptile and fish parts in their treatments; still others used amulets, incantations and gemstones in their treatments. The objective of the present survey was to document the gemstone use for both preventive and curative purposes by the Bede practitioners of Porabari village in Savar area of Dhaka district, Bangladesh.

## Materials and Methods

The present survey was conducted among the Bede community residing in Porabari village by the Bangshi River of Savar Municipality in Dhaka district, Bangladesh. The community, according to the community leaders comprised of about 12,000 persons. They had been settling in the area for over a decade in land given to them by the Government of Bangladesh as well as land purchased by them. A preliminary survey revealed that there were around 30 traditional medicinal practitioners currently practicing within the community. Five traditional medicinal practitioners were identified among the thirty practitioners who, besides providing other forms of traditional treatment, also prescribed gemstones for both curative and preventive purposes. These five practitioners, namely Zillur Rahman (male), Md. Khabir Uddin (male), Joigun Ojha (female), Mohammad Nurul Haque (male), and Md. Shahjahan (male) were selected for further interviews.

Interviews were conducted with the help of a semi-structured questionnaire. Interviews were open-ended, meaning that the practitioners were asked about their practices and were allowed to talk in length on anything they wished with minimal interruptions from the interviewers. Interviews were conducted in Bengali, a language spoken by both practitioners and interviewers.

The various stones mentioned by the practitioners were purchased from them and identified at reputed jewelers of Dhaka city. Two of the stones could not be identified by the jewelers, namely shorpomoni pathor and shilajit pathor. Information about the first stone was gathered from the practitioners, and information on the second stone was obtained from Internet sources.

## Results and discussion

A total of 29 types of stones (gemstones and other types) were observed to be used by the five Bede practitioners interviewed. The results are shown in Table 1. The stones were advised to be worn in a finger ring (usually made from silver or gold) and the healers claimed that every individual stone which they recommended possessed both preventive and curative effects for the malady that they were used for. Gemstone in its traditional definition is a precious or semi-precious stone, which is also a mineral, and is usually used to make jewelry or other adornments. However, certain rocks like lapis lazuli and organic materials such as amber, although not being minerals, are used in jewelry, and are therefore considered as gemstones. Also coral is not a mineral (which is an inanimate substance) but is the skeleton of a marine animal belonging to the phylum, Cnidaria. Pearls are created by oysters or mollusks, and are composed of the mineral, aragonite. For purposes of the present study, both corals and pearls will be treated as gemstones, because both contains minerals and are used for jewelry, even though they may have originated from animate, i.e. living matter in the first place. Traditionally, only diamond, ruby, sapphire and emerald have been classified as precious, the rest being considered semi-precious. From that view point, 27 out of the 29 stones on which information was obtained can be classified as gemstones. The two exceptions were 'shorpomoni pathor' and 'shilajit pathor'.

Shorpomoni pathor is found, according to the Bede healers, when the molars of the King cobra (*Ophiophagus hannah* Cantor, Family: Elapidae) or the Indian cobra (*Naja naja* L., Family: Elapidae) are extracted to reveal a small round-shaped yellow-tinged stone under the molar tooth. Shilajit is a Sanskrit word meaning 'rock invincible' and is mainly found in the highlands of Altai, Himalaya and the Caucasus mountains in Central-Asia. Its color is yellowish brown to pitch black. For medicinal use the black variant is preferred, being the most potent. Shilajit can and has been described as 'mineral oil', 'stone oil' or 'rock sweat', as it seeps from cracks in mountains due to the warmth of the sun, mostly. In Bengali, shilajit is referred to as 'sweat of rock', and pathor means rock.

Diseases treated by the Bede healers included both physical sicknesses as well as mental disorders. The latter included thought processes in the mind, where the person thought of himself or herself to be under 'evil influences'. Successes or failures in business, to keep temperament in control, to increase determination, to be successful in life – all were classified under probable disease conditions, for disturbances in any of them could lead to deterioration of physical and mental health. As such, according to the healers, it is better wearing the stones before any disaster or diseases can occur; as such the stones fulfilled a preventive purpose. But on the other hand, if any process has already occurred leading to physical or mental ill health, that can also be remedied by wearing stones as prescribed by the healers. From that view point, every stone also had its own curative effects.

The Bede healers used several colors of coral for treatment and prevention of diseases. White coral was the only stone that was advised to be worn along with oral administration of three plant parts as treatment for leprosy. Besides leprosy, other diseases (physical or otherwise) treated by white coral included severe body ache, physical weakness, leucorrhea, genital infections, and to protect oneself from Rahu and Shani. Rahu and Shani (see footnote to Table 1 for details), according to Hindu astrologers, can have enormous destructive influences in life and cause severe physical and mental problems. There can further be problems in different aspects of life, like accidents, business failures, loss of valuables, or even academic failures. It is to be mentioned that the Bede healers, although they have adopted the Muslim religion, still practiced polytheism and animism besides obeying the various rituals like prayers and fasting of Islam. At least some notions of astrology was common to them and they claimed that they can forecast a person's approaching evils or misfortunes from the person's zodiacal signs and positions of certain planets and stars, and advise wearing of stones to ward off these misfortunes. Red coral was advised to be worn for anemia, excessive bleeding during menstruation, as well as to keep temperament cool. The latter can be, according to the healers, make a person successful in life through having good relationship with others. The healers also advised a person who quickly gets angry to wear red coral. Such cases may be considered as treatment of psychosomatic disorders.

**Table 1:** Gemstones used by the Bede traditional healers of Porabari village for treatment and prevention of physical sicknesses and mental stresses.

Serial Number	Type of stone (local name)	English name of stone (where available)	Ailment(s) treated
1	Dudhraj, Dudh probal, Dudh pola	White coral (color of milk)	Severe body ache, physical weakness, leucorrhoea. (Kaviraj 1) Leprosy. At the time the stone is worn, the patient must also partake of a combination of bark of <i>Terminalia arjuna</i> , leaf of <i>Aloe vera</i> , and root of <i>Glycyrrhiza glabra</i> . Eggs and milk are also forbidden to be eaten during this period. (Kaviraj 1) Dhatu rogh (term used by Kavirajes for genital diseases, which occurs from bathing in contaminated water bodies, symptoms being infections in genital regions, and tremendous urge for urinating while bathing in ponds or other water bodies where the lower part of the body is submerged within water), meho (Kaviraj term – usually denotes diabetes). (Kaviraj 2) To protect oneself from Rahu <sup>1</sup> and Shani <sup>2</sup> (the two terms essentially means that a person falling under their influences will have misfortunes happening to him or her). (Kaviraj 3)
2	Purbal pathor	Coral (white color with red spots)	Severe body ache, rheumatic pain. (Kaviraj 1)
3	Pola	Coral of unspecified color but may be black or yellow	Severe pain, wet dream. (Kaviraj 1) To rise in status in workplace. (Kaviraj 5)
4	Rokto probal, Rokto pola	Red coral	Anemia. (Kaviraj 1) Excessive bleeding during menstruation. (Kaviraj 2) To keep temperament cool. (Kaviraj 3)
5	Ashto probal	Coral having an orange color mixed with yellow	Debility, dizziness, restlessness, heart palpitations, body fever, wasting away of body. (Kaviraj 1)
6	Gomez	Hessonite (honey yellow or orange color)	Physical weakness in males. (Kaviraj 1) To protect oneself from Rahu <sup>1</sup> and Shani <sup>2</sup> (the two terms essentially means that a person falling under their influences will have misfortunes happening to him or her), for improvement of living. (Kaviraj 3)
7	Shada Gomez	White hessonite	Leucorrhoea. (Kaviraj 1)
8	Kalo Gomez	Black hessonite	Stomach stones, stomach tumor (ring containing the stone can be worn for any length of time but usually worn for 1-2 months on the ring finger of the left hand). Symptoms of the above diseases include left abdominal pain.
9	Akik	Carnelian, Akik, Hakeek	Any type of diseases, wet dreams. (Kaviraj 1) To prevent the evil influences of Saturn (Bengali: Shani, see footnote to Table), to fulfill one's desires. (Kaviraj 4)
10	Kalo akhi pathor, Kalo hakik	Black carnelian	Any type of pain. (Kaviraj 1) To keep brain cool. (Kaviraj 2)
11	Suleimani hakik	Suleimani hakeek, Cyclops agate, Eye agate (a special type of carnelian, highly prized by the Muslims)	To keep brain cool. (Kaviraj 2)
12	Tiger	Tiger's-eye	Rheumatism, physical weakness, to increase determination. Note that the stone will cause the user to be very angry at times. People under the zodiacal sign of Libra can use this stone; people under the sign of Leo cannot. (Kaviraj 1) To keep temper under control. (Kaviraj 2) To increase determination. Usually it is meant to be worn by leaders or powerful men, who have to exist with various types of dangers in their lives. (Kaviraj 5)
13	Moni-stock, Moni-ston	Moonstone	Meho (Kaviraj term – usually denotes diabetes), rheumatic pain, dizziness, to keep temperament cool, physical weakness. (Kaviraj 1) To keep head cool. (Kaviraj 2) To keep temperament cool. (Kaviraj 3) To keep temperament cool, to destroy effects of consumed poisoned fruits, when such fruits are poisoned by an enemy). (Kaviraj 4) To maintain coolness of mind. (Kaviraj 5)
14	Panna	Emerald	To increase memory. (Kaviraj 1) To decrease animosity shown by other persons. (Kaviraj 2) To improve one's business. (Kaviraj 5)
15	Chuni	Ruby	Meho (Kaviraj term – usually denotes diabetes), weakness, tremors. (Kaviraj 1)
16	Ruby star	Star ruby	To do well in business. Intended for persons of Libra. (Kaviraj 2)

**Table 1:** Continue

17	Neelam, Padma neela, Neela pathor, Neela	Blue sapphire	Severe body ache, sexual weakness in male or female, to keep temperament cool. (Kaviraj 1) To increase learning, memory, and strength. (Kaviraj 1) To profit in business ventures. (Kaviraj 2) Gonorrhea (symptoms: lower abdominal pain, urine coming out in slow spurts or incomplete urination), burning sensations during urination. (Kaviraj 4) To improve in business. (Kaviraj 5)
18	Pokhraj	Yellow sapphire	Headache. (Kaviraj 2) To be successful in business, to be successful in marriage. (Kaviraj 5)
19	Shada pathor	Unidentified (white color)	Leucorrhea. (Kaviraj 1)
20	Tomez	Topaz	Any type of diseases. Must be worn with a serious intention of curing the disease, i.e. the stone should not be worn carelessly. (Kaviraj 1)
21	Kona	Amethyst (cabochon cut)	Wet dream in males, meho (Kaviraj term – usually denotes diabetes) in both male and female. Should be worn on the ring finger (Bengali: anamika) of the right hand. (Kaviraj 1)
22	Ganga	Unidentified	Severe pain. (Kaviraj 1)
23	Kechra	Unidentified	To increase memory, to get rid of enemies, leprosy (Kaviraj term – shet kushti, symptoms – fingers and flesh fall by themselves). (Kaviraj 1)
24	Shakti kamona pathor	Unidentified	To increase strength, to be successful in any intended work. (Kaviraj 1)
25	Mukto	Pearl	To keep head cool. (Kaviraj 2) Leucorrhea, to keep temperament cool. (Kaviraj 3) To improve brain power, to keep brain cool. (Kaviraj 5)
26	Shorpomoni pathor	Stone collected from underneath a poisonous snake's fangs; small round bead like stone, faint yellowish in color	To protect from Rahu <sup>1</sup> and Shani <sup>2</sup> . The two terms essentially means that a person falling under their influences will have misfortunes happening to him or her. (Kaviraj 2) To be able to talk fluently, to fulfill one's desires. (Kaviraj 3)
27	Monmiloni pathor	Unidentified stone	To fulfill one's desires, to move obstacles from any intended act, to stop stuttering. (Kaviraj 3)
28	Shilajit pathor	Shilajit <sup>3</sup> (Mineral pitch)	To increase libido in males. (Kaviraj 5)
29	Shamchu tara	Unidentified stone	To cure mental restlessness. (Kaviraj 5)

Various colors of hessonite were advised by the healers for prevention and cure of physical weakness in males, to protect oneself from misfortunes, leucorrhea, and stomach stones or tumor. Hessonite is a calcium aluminum mineral of the garnet group with the general formula  $\text{Ca}_3\text{Al}_2\text{Si}_3\text{O}_{12}$ . Interestingly, white hessonite was advised to be worn for leucorrhea, a disorder characterized by presence of white thick matter in urine. White coral was also advised for leucorrhea, while red coral was advised for anemia or excessive bleeding during menstruation. The latter two disorders are connected with blood, which has the color of red. Thus it seems quite probable that the color of stone may be a determining factor as to the disease for which they were advised to be worn; in such cases, the disease may have symptoms or characteristics of that same color.

Carnelian is a brownish-red mineral of the variety of silica mineral chalcedony, the latter being one of the microcrystalline group falling within the Quartz family. It is one of the birthstones listed in the ancient Arabic, Hebrew, Italian and Roman tables, and is considered a Zodiac birthstone for the signs of Leo and Virgo. Hakeek is a type of carnelian found in Turkey and Iran. This stone is regarded by the Muslims as to bring good luck and ward off disasters in life. Suleimani hakeek is a special type of hakeek, which when cut and polished resembles an eye, for which it is also known as the Cyclops agate or the Eye agate. The stone is considered to have mystical properties and special powers for bringing fortunes to a person when worn on the finger.

Tiger's eye stone was advised by three Bede healers to be worn for physical disorders or to improve temperament and determination. This stone is considered as a chatoyant, which is an optical reflectance effect, i.e. showing a band of bright reflected light caused by aligned inclusions in the stone. The stone belongs to the quartz group of stones and is in most cases a metamorphic rock. The stone is an example of pseudomorphous replacement (a mineral that has the crystalline form of another mineral rather than the form normally characteristic of its own composition) of crocidolite by silica.

Moonstone has the chemical formula  $(\text{Na,K})\text{AlSi}_3\text{O}_8$ , which means it is a sodium potassium aluminum silicate. This stone was advised to be worn by all five healers interviewed. Its major effect seems to enable a person to maintain coolness of mind or temperament. The stone has a whitish color; white color usually denotes a certain degree of serenity and peace, which indicates that the stone is to be worn to attain a certain degree of mental serenity.

Emerald, ruby, and sapphire all are considered as precious gemstones. Emerald is a variety of the mineral beryl [ $\text{Be}_3\text{Al}_2(\text{SiO}_3)_6$ ] and has a green color, caused by presence of trace amounts of the elements, chromium or vanadium. Green color is considered to give a soothing effect to the eyes and nerves; one of the uses of the stone, as mentioned by one Bede healer, was to decrease animosity. Ruby is a variety of the mineral corundum (aluminum oxide), where the red color is caused by the presence of the element chromium. Ruby is considered by the Hindu astrologers to instill vitality and strength in the person wearing it. One of the uses of ruby, as mentioned by the Bede healers was to prevent or get rid of weakness. A second use was for diabetes, a disease known to sap the strength of the person having the disease. Sapphire is a blue gemstone and is another variety of the mineral, corundum. It can have other color due to presence of trace elements like iron, titanium, or chromium. Blue sapphire is considered by Hindu astrologers to release mental tension and depression. Yellow sapphire, on the other hand, is considered to attract wealth and bring prosperity. Notably, the Bede healers advised wearing the yellow sapphire for achieving success in business.

Topaz is a silicate mineral most often found in igneous rocks of felsic (relating to an igneous rock that contains a group of light-colored silicate minerals, including feldspar, feldspathoid, quartz, and muscovite) composition. Blue topaz, in particular, is supposed to stimulate the throat chakra (chakra, according to Hindu philosophy is a center of distribution of energy throughout the body). The healers advised persons to wear it both to prevent and cure any type of diseases, suggesting that this stone is considered to be very special among the healers. Amethyst is considered a semi-precious stone, whose color ranges from purple to reddish violet and can also be found in milky to green color. The stone has a long history of usage; ancient Egyptians used the stone to guard against guilty and fearful feelings. The stone is also used as a protection from witchcraft. The Bede healers advised wearing the cabochon shape of amethyst, which means a stone that has been shaped and polished as opposed to faceted. The resulting stone has a convex top with a flat bottom.

A pearl is a hard object produced within the mantle of a living shelled mollusk. A pearl is made up of calcium carbonate in minute crystalline form. Pearl is thought to inhibit boisterous behavior, and the healers advised wearing it to keep a cool head and temperament. Usually river pearls in Bangladesh are white in color; the healers also advised wearing pearl as treatment for leucorrhoea.

Taken together, at least some of the uses of the various gemstones may be related to their color which coincided with some symptoms of the disease. Quite obviously, the use of stones to prevent or cure diseases is an esoteric form of treatment. The various diseases treated or supposedly prevented included both physical disorders, as well as other forms of disturbances in life, which can lead to mental stress, which by itself can lead to occurrences of physical sickness or psychosomatic disorders. There are no rational explanations behind the property of stones; the theories dealing with the healing properties of stones mostly involves planets, stars, zodiacal signs and the supposed influences of these on a person's life. However, gem therapy goes back to ancient times and is also mentioned in the ancient Ayurvedic texts of India. Ayurveda is the oldest form of traditional medicine still practiced in the Indian sub-continent and gem therapy forms an important component of this traditional form of medicine (Klemens, 2002; Pal, 2002; Shakeel *et al.*, 2011). Besides India, gem therapy is also still practiced in Pakistan, another country within the Indian sub-continent (Ishaque *et al.*, 2009). Wearing of gemstones is in wide practice in Bangladesh (another country within the Indian sub-continent), not in the folk medicinal system, but among the population as a whole; the Muslims usually wear one or other form of carnelian or agate, while Hindus are prone to wearing varieties of gemstones depending on their planetary signs, as determined by Hindu astrologers. The Bedes have been observed in the present study to practice gem therapy. Since this practice is ancient, it remains for science to determine whether there can be a rational basis behind the use of gemstones, or this practice is merely causing a soothing effect on the mind and intensification of a person's belief that the person will be cured from actual or presumed disturbances of physical, mental and financial nature. Even if it is the latter, the stones must be considered to have therapeutic effects; most diseases are to a certain extent psychosomatic and any progression or regression of a disease depends to a certain extent on the person's level of confidence and state of mind. If gemstones can be found to cause a diseased or stressed person to attain a higher level of confidence in achieving a cure, then gem therapy no doubt will have proved its value.

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