

Short Communication

An ethnobotanical survey of herbal male contraceptives used in south-west Nigeria

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This survey was carried out in targeted areas of south-western Nigeria to ascertain the patronage of traditional healers for non orthodox contraceptives by males and to take an inventory of plants used for such purposes. Males in south-western Nigeria rarely but do consult traditional healers for herbal contraceptives. The common methods of application include oral decoction, dried powder applied to skin incisions and as rings soaked in herbs and worn on the fingers. The plants *Aframonium melegueta* and *Carica papaya* were the most widely used herbs as male contraceptives.

Key words: Herbal, ethnobotanical, male contraceptives, survey, Nigeria.

INTRODUCTION

The present survey deals with the documentation of some herb based male contraceptives used in south-western Nigeria. South-western Nigeria is that part of the country that lies between 60 and 90 north latitudes of the equator and 30 and 60 east longitude of the Greenwich meridian. Like other parts of the country, it is also divided into administrative states and then into councils, known as Local Governments (LG: smallest administrative unit in Nigeria and is composed of many towns and villages. Tribes and cultural considerations are the most important considerations in constituting a LG Council. Ethno-medicinal practices are, therefore, quite similar within any LG), that mirrors the cultural divide. The Yoruba tribe and their derived cultures are the main traditional inhabitants of south-western Nigeria.

Men for a long time being had only a limited choice of certain contraceptive methods like abstinence, withdrawal, condoms, vasectomy etc. Despite of this, men went on participating in various efforts to control fertility for millennia (Darroch, 2008). For a long time, man played a prominent role in contraceptive use until the introduction of oral contraceptives and modern intrauterine contraceptive devices (IUDs) in the second half of the 1900s. As for example, in 1955, men's use of

the condom and its withdrawal accounted for 32% of all contraceptive uses among married white women aged between 18 to 39 years in the United States. Another 21% of couples relied on periodic abstinence, a method also involving male participation (Whelpton et al., 1996). With the development of certain successful methods on females, most of the burdens of contraceptive are now on women, thus taking men out from the sphere of contraceptive. Globally, men have not shared the responsibility equally with women for fertility regulation, the lack of male involvement may also reflect the limited options available to men (Ringheim, 1993). It has been observed that fewer than half of men aged 25 to 39 years in union do discuss family planning with their wife or partner in much of sub-Saharan Africa, Pakistan and in Egypt (TAGI, 2003). The use of herbs is almost universal among non-industrialized societies (DaSilva et al., 2002). Most Nigerians, especially those living in rural communities do not have access to orthodox medicine, and it is estimated that about 75% of the populace still prefer to solve their health problems consulting traditional healers (Adesina, 2009). It is therefore, plausible to expect some patronage of traditional healers by men in Nigeria for contraceptive purpose.

MATERIALS AND METHODS

Using convenient sampling, one LG was selected from each of 4 states. These areas were Sagamu LG area in Ogun State, Ibadan

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Table 1. Plants used as single agents for male contraception in south-western Nigeria.

| S/No. | Local (vernacular) name | Common name | Scientific name | Parts used | Method of application |
|-------|-------------------------|---------------------------|-------------------------------|------------|-----------------------|
| 1 | Etiponla | Hogweed | <i>Boehavia diffusa</i> | Leaf | Ring |
| 2 | Iru | Locust beans | <i>Parkia bigglobo</i> | Seed | Ring |
| 3 | Ibepe | Pawpaw | <i>Carica papaya</i> | Bark | Ring/Decoction |
| 4 | Ataare | Alligator pepper | <i>Aframonium melegueta</i> | Seed | Ring/Incision |
| 5 | Eeru alamo | Negro or Ethiopian pepper | <i>Xylophia aethipica</i> | Fruit | Decoction |
| 6 | Aidan | Aidan tree | <i>Tetrapleura tetraptera</i> | Fruit | Decoction |
| 7 | Osan wewe | Lime | <i>Citrus limon</i> | Juice | Decoction |

The vernacular names are in Yoruba language. Ring form of application involves boiling a metal ring in water extract of the plant for hours. The ring is then worn on the finger during sexual activities. Incision involves making up to 7 cuts on the leg and applying the dried powder of the plant to the fresh wound.

Table 2. Plants used in combination for male contraception in south-western Nigeria.

| S/No. | Plants and combination | Method of application |
|-------|--|-----------------------|
| 1 | <i>Boehavia diffusa</i> , <i>Parkia bigglobo</i> and <i>Aframonium melegueta</i> | Ring |
| 2 | <i>Carica papaya</i> and <i>Aframonium melegueta</i> | Ring |
| 3 | <i>Carica papaya</i> and <i>Tetrapleura tetraptera</i> | Incision |
| 4 | <i>Citrus limon</i> and Potash* | Decoction |

*Potash is the common name of potassium carbonate. We have retained the common name here because it represents (only) the white residue obtained after leaching wood ashes and evaporating the solution obtained.

southwest LG in Oyo State, Ede LG in Osun State and Ofa LG in Kwara State. The investigation was conducted by direct interviews traditional healers and medicinal plant sellers, documenting consultations for contraception by male, names of medicinal plants used, methods of preparation and doses of administration. At least one traditional healer and one trader of medicinal plant in each of the major villages of each LG were pre-specified to interview. Anecdotal evidence suggests that medicinal practitioners that are easy to trace are usually the more established and more experienced in any LG, and are usually those with the higher patronage. For the purpose of this study, traditional healer was defined as a person recognised by the community in which he lives as competent to provide healthcare by using vegetable, animal and mineral substances and other certain methods based on the social, cultural and religious background. Similarly, traditional medicinal ingredient traders was defined as those involved in buying and selling of plants, animals and insects used in making herbal preparations. The common and scientific names of the plants were identified by literature search using the given vernacular name as the search term referring literatures like Adesina (2009), Bulletin of Royal Botanic Gardens (1891), David (1997) that may or may not be ethnobotanical but done by a Yoruba plant taxonomist was used for identification. Fifteen medicinal practitioners (five traditional healers and ten medicinal traders) were interviewed. Only 4 (26.7%) interviewees had ever been consulted for male contraceptives and all had herbal preparations for such a purpose. Most of the herbs were used as a single preparation (Table 1) while some were used in combination (Table 2).

RESULTS

Decoction and rings were the common methods of

application, although some were applied as powder rubbed into fresh skin incisions. Rings were usually metal rings boiled in water extracts of the relevant parts of the plant and subsequently worn on the fingers during sexual acts. All plants and methods of application were claimed to be equally effective.

DISCUSSION

This study confirms the medicinal plants offered by traditional healers, used as male contraceptives in south-western Nigeria. It also reveals that even in traditional medicinal practices, male contraceptive is not in vogue because only 26.7% of interviewees have ever been consulted for or offer male contraceptives. On the other hand, the availability of female orthodox hormonal contraceptives that are either frequently free or is offered at a very low cost. These may have discouraged the continued practice of traditional contraceptive methods, especially in case of males, with loss of knowledge of its practice. This possibility makes it very important to conduct further studies to document available knowledge of medicinal plants used for male contraception. The use of medicinal plants as decoction and incision may be consistent with pharmacological effects but the wearing of rings that have been boiled in herbal extracts or concoctions for contraception may be difficult to explain.

Trans-dermal delivery of the active chemical(s) may be an explanation but the requirement for putting on the ring only during sexual activities makes this explanation unlikely. Quite a number of medicinal plants have already been shown to have male anti-fertility properties like *Achyranthes aspera*, *Stephania hernandifolia* and *Carica papaya* (Daniel et al., 2006; Joshi, 2002; Atal and Kupur, 1982) and this study reveals the additional plants (Table 1) that may be further evaluated. *Carica papaya* seed extract has been shown to possess *in vitro* sperm immobilising effect on human spermatozoa (Lohiya et al., 2000) but only the bark is documented to be of medicinal use for such a purpose in the study area. The use of the decoction of *Citrus limon* in combination with potash for male contraception in the study area may be consistent with the finding by Shobha et al. (2005) that a mineral herbal preparation marketed in India caused significant reduction in the number of implantation in female rats mated with males pre-treated with the preparation.

Conclusion

Herbal male contraceptives are available in south-western Nigeria and used as either decoctions, rings or instilled into skin incisions. The ethno-pharmacopeia is quite limited and this may be related to loss due to competing orthodox female contraceptives. It may be important to conduct further studies to document medicinal male contraceptives.

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