



## Elemental mercury use in South African traditional medicine

By Renee Street, PhD

Environment & Health Research Unit

13 December 2016



## Introduction

- Mercury (Hg) is a naturally occurring element found in air, water and soil
- It exists in three main forms namely elemental mercury, inorganic mercury and methylmercury
- Mercury for therapeutic purposes was prevalent until the 20th century when the detrimental effects of its exposure became notorious



## Introduction

- Nonetheless, mercury use in traditional healthcare systems is still widespread today



Examples include:

- Caribbean and Latin American traditions: mercury ('azogue') is used for a range of cultural and religious practices linked to healthcare including the use of mercury to treat intestinal disorders
- Chinese medicine: colloquial names of 'cinnabaris' (mercuric sulfide) and 'calomel' (mercurous chloride)
- In efforts to eliminate mercury-related diseases, WHO has emphasized the need to identify traditional practices involving mercury

## Study rationale

- South African traditional medicines are commonly plant-derived materials however the addition of inorganic substances as therapeutic agents have been documented
- Such substances are collectively known as *imikhando* in isiZulu; the literal translation of which is 'ore'
- Mercury, is an example of an *imikhando*, and is colloquially referred to as *isigidi* ('millions')



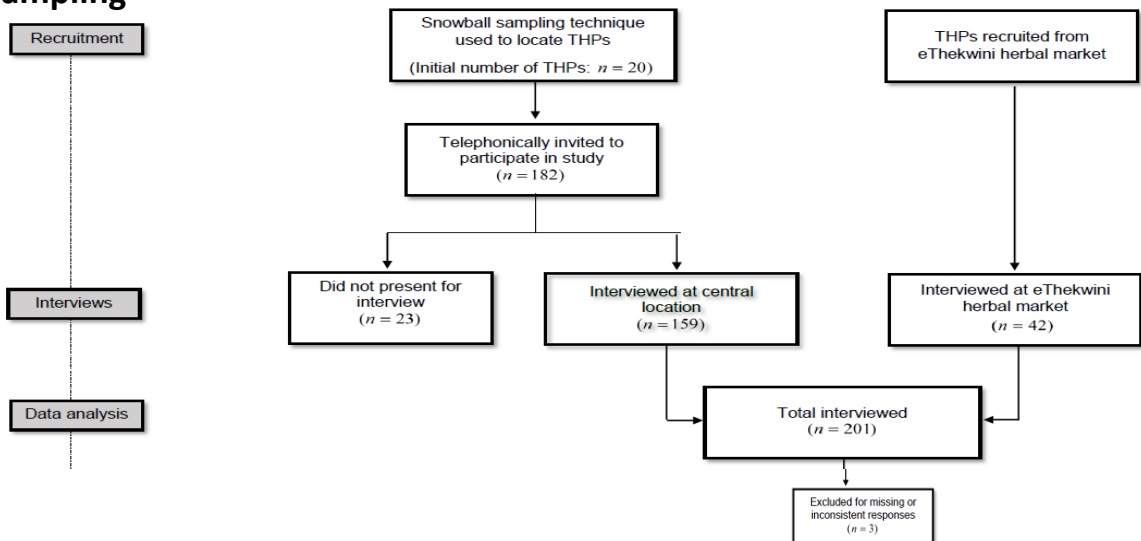
Fig 1. Examples of mineral salts used in traditional medicine

## Aim

To determine the prevalence of mercury use by Traditional Health Practitioners (THPs) and among those using mercury for healing purposes, to determine reasons for therapeutic administration as well as mode of administration



## Sampling



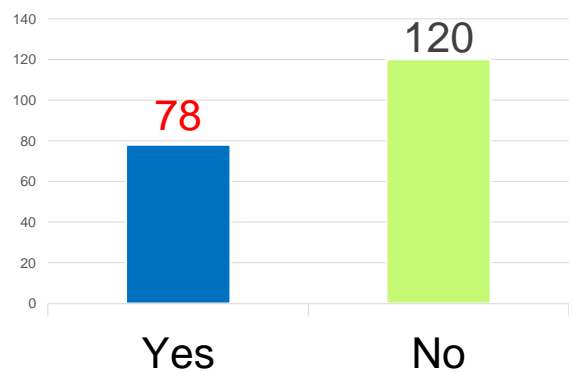
## Results

- The majority of respondents were female (n = 141; 71%)
- The median practice period was 8 years
- The level of education ranged from none (16%) to having attended tertiary education (3%)



## Results

- Mercury used for healing purposes was reported by **78** THPs (39%)
- No statistical significance was found between demographic characteristics of the THPs and mercury use (mercury use versus non-use) (all p-values < 0.05)



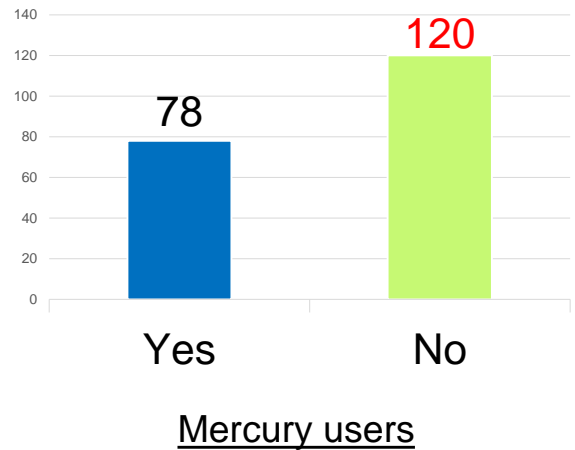
### Mercury users



## Results

Of the **120** THPs responding to reasons for not using mercury, explanations included:

- not knowing how to use it (n = 105; 88%)
- it being unsafe (n = 10)
- they don't believe in it (n = 3)
- their ancestors say it must not be used (n = 2)



## \*Reasons for mercury administration (N)

Childbirth	70 (90%)
Protection from guns	39 (50%)
Sterility	4
During pregnancy	3
Protection ritual on house	2
Gynaecological complaints	1
Aphrodisiac	1
STIs	1
Gastrointestinal: aches and cramps	1
Liver	1
Kidney/bladder	1
Nervousness	1
Aches, pains and swelling	1
Love medicine	1

\*multiple responses allowed





## \*Modes of mercury administration (N)

Orally	66 (85%)
Sub-cutaneous implantation	46 (59%)
Enema	2
Use in bath	2
Inhalation/facial sauna	1
Licking off hand	1

\*multiple responses allowed



## Safety and significance

- All mercury using THPs stated that none of their patients had ever had a bad reaction to the mercury
- 76 THPs (98%) stated that mercury is only safe when administered by trained THPs
- Mercury usage is believed to be very significant in South African traditional medicine by 51 (67%) THPs whilst other THPs said it was moderately (18; 24%) or not at all significant (7; 9%)





## Conclusion

- The potential mercury exposure to THPs is an unregulated and undocumented occupational hazard
- The THPs and end users of the mercury are at risk from mercury exposure via various administration techniques identified in this study
- The significance of mercury use in South African traditional medicine reported by THPs in this study implies an established cultural practice
- Knowledge regarding traditional medicine mercury exposure and subsequent harm to both mother and foetus should be incorporated into prenatal education sessions



## Acknowledgements

We are grateful to the THPs for providing their valuable time.


Special thanks to Makosi Mpume Mbatha

This project was funded by the South African Medical Research Council (SAMRC) and University of KwaZulu-Natal

A special thanks to Nokulunga Cele

This presentation was based on the following publication in *Environmental Health* :

**RESEARCH**
**Open Access**



## Metallic mercury use by South African traditional health practitioners: perceptions and practices

Renée A. Street<sup>1,2\*</sup>, Gaëtan M. Kabera<sup>3</sup> and Catherine Connolly<sup>3</sup>

**Abstract**

**Background:** Mercury is a toxic metal however its use in traditional healthcare systems remains widespread. The aim of this study was to determine the prevalence of mercury use by South African Traditional Health Practitioners (THP) and to document reasons for use and administration methods.

**Methods:** A cross-sectional study design was employed. A total of 201 THPs were enrolled from two main metropolitan areas of KwaZulu-Natal (South Africa), and 198 were included in the final analysis. Information on demographic characteristics, reasons for using or not using mercury as well as mercury administration methods were collected.

**Results:** Of the 198 THPs, 78 (39 %) used mercury for healing purposes and 74 (95 %) of the mercury users stated that they were taught to use it by another THP. The two main routes of administration were oral and sub-cutaneous implantations (ukugcaba) at 85 % ( $n = 66$ ) and 59 % ( $n = 46$ ), respectively. The most common responses for mercury administration were for child birth ( $n = 70$ ; 90 %) and protection against guns ( $n = 39$ ; 50 %).

**Conclusion:** This is the first study to describe the prevalence and practice of mercury use in South African traditional medicine. Socio-cultural mercury use is a potential source of exposure to both THPs and their patients. In light of such findings, public education messages and regulatory measures need to be effected.

**Keywords:** Mercury, Traditional medicine, Traditional health practitioners, Socio-cultural practices

PRESENTER: Renée Street, PhD

UNIT: Environment & Health Research Unit

E-MAIL: [renee.street@mrc.ac.za](mailto:renee.street@mrc.ac.za)

