

Dietary Salt Reduction: A Glance at India and South Africa

Fadzai Mushoriwa¹, Seema Rath², Nomvelo Mabika¹, Sean James Bosman³, Sunitha Chandrasekhar Srinivas^{1*}

¹Faculty of Pharmacy, Rhodes University, SOUTH AFRICA.

²Hugh Kelly Fellow, Faculty of Pharmacy, Rhodes University, South Africa/ Department of Economics, Government College, Khandola-Goa, INDIA.

³Department of English, Rhodes University, Grahamstown, SOUTH AFRICA.

ABSTRACT

India and South Africa have a high burden of non-communicable diseases (NCDs), with cardiovascular diseases being the most prevalent. Salt reduction has been identified as a cost effective way of addressing the burden of NCDs such as hypertension and cardiovascular diseases. Salt is introduced into the diet mainly through the consumption of processed foods and discretionary salt that is added during and after cooking. The World Health Organisation recommends 5 g of salt as the adult maximum daily intake. Both the Indian and South African populations, however, have higher intakes. India and South Africa have recognised the need for salt reduction and have taken steps to develop and implement salt reduction initiatives.

Key words: Salt reduction, Non-communicable diseases, India, South Africa, Sustainable Development Goals.

INTRODUCTION

Non-communicable diseases (NCDs) are emerging as the leading cause of global deaths and disability. Globally, cardiovascular diseases (CVDs) pose the highest risk of mortality, accounting for over 46% of global NCD deaths. CVDs claim the largest proportion of NCD deaths under the age of 70 years (37%), and it is predicted that mortality due to CVDs will increase from 17.5 million in 2012 to 22.2 million by 2030.¹ CVDs are caused primarily by raised blood pressure (BP), cholesterol, and smoking. Among these, raised BP poses the most important risk factor, accounting for 62% of strokes and 49% of coronary heart disease.² Evidence shows a strong association between high sodium intake and raised blood pressure.^{2,3} Salt is the major dietary source of sodium, suggesting that a reduction in salt intake could have a beneficial effect on blood pressure.³ The World Health Organisation (WHO) has therefore identified salt reduction as a 'Best-Buy' for addressing the global burden of NCDs such

as hypertension, cardiovascular and cerebral vascular diseases. 'Best buys' are cost effective and feasible initiatives that could be implemented by countries to reduce their burden of NCDs.

This article compares the burden of NCDs and sources of salt in South African and Indian diets, and reviews the policies and actions taken by both countries in reducing their population's mean daily salt consumption. This article will also address dietary salt related aspects of the South African and Indian NCD action plans, developed to meet target 3 of the Sustainable Development Goals (SDGs) by 2030.

SALT AND HEALTH

In small quantities, dietary salt plays a homeostatic role in the body. But excessive consumption of dietary salt has been identified as a cause of hypertension.⁴ In 2010 excess dietary salt alone was responsible for 1.7 million NCD related

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Address for correspondence:

Sunitha Chandrasekhar Srinivas,

Faculty of Pharmacy,
Rhodes University
PO Box 94,
Grahamstown,
SOUTH AFRICA.

Phone no: +27 46 6038496

E-mail: s.srinivas@ru.ac.za



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deaths globally.⁵ High blood pressure is a risk factor for NCDs such as cardiovascular diseases and strokes.⁶ Excessive consumption of salt is also a risk factor for conditions such as stomach cancer, osteoporosis and renal diseases.⁷ The WHO recommends that the adult (≥ 16 years of age) daily dietary salt intake should be less than 5 g/day, as it has shown to be of great benefit in the reduction of blood pressure, which in turn reduces the risk of associated NCDs. For children below the age of 15, the adult recommendation of 5 g of salt/day should be adjusted according to the children's energy requirements.⁸

SOURCES OF SALT IN THE INDIAN AND SOUTH AFRICAN DIET

Salt is a common ingredient in processed food, where it is used as a preservative, for flavouring and as a food texturiser.⁹ In recent years the consumption of processed foods has increased due to lifestyle changes, urbanisation, increased disposable income and increased number of women joining the workforce. The increase in women being employed has resulted in them having less time to prepare meals in their households, contributing to the appeal of the convenience of processed foods.¹⁰ In the South African diet, salt is introduced primarily through processed foods, with bread being the main contributor, followed by margarine, processed sausages and soup bases.¹¹ Discretionary salt (salt added during food preparation or at the table) accounts for 40% of the salt in the diet.¹² South Africa has one of the highest daily dietary salt consumptions, with the average adult consuming an average of 7.8-9.5 g of salt/day.¹¹ A study has found that, in the Indian population, the average adult consumes between 9-12 g of salt/day, with discretionary salt currently being the main contributor of excess dietary salt. The main foods that contribute salt in the Indian diet are pickles, chutney, papads and canned foods.¹³ Evidence suggests that in the near future processed foods will become the primary source of dietary salt due to lifestyle changes taking place in India and the establishment of multinational fast food businesses.¹⁴

The age-standardised estimated sodium intake for persons aged 20 and above is considerably higher in India than in South Africa (Table 1). Over a span of 20 years, a slight decrease in sodium intake has been observed in India, while there has been an increase in the case of South Africa.

SALT REDUCTION INITIATIVES IN INDIA AND SOUTH AFRICA

In India and South Africa, NCDs account for 44% and 60% of total deaths per year respectively. Cardiovascular

diseases (CVDs) have the highest prevalence in both countries, being responsible for 18% of deaths in South Africa and 26% in India.^{15,16} In South Africa, the proportion of people with raised blood pressure, the major risk factor for CVDs, was significantly high in 2008. However, the same decreased by 10% within a span of six years (Table 2). On the contrary, in India, the percentage of people with raised blood pressure increased significantly between 2008 and 2010, but decreased slightly in 2014. At present, nearly 140 million people in India live with hypertension, which is predicted to rise further to 214 million by 2030.¹⁷ In South Africa, 6.2 million people are affected by hypertension.¹⁸ Thus, in both countries, currently more than 10% of the total population lives with hypertension.

With NCDs emerging as a global burden, the WHO developed a global monitoring framework for NCDs in 2011 to address their epidemic rise. One of the nine targets includes the reduction of mean salt consumption by 30% by 2025.¹⁹ The 'South African Declaration on the Prevention and Control of Non-Communicable Diseases' aims to reduce mean population salt intake to less than 5 g/day by 2020,²⁰ while India aims at a 20% and 30% reduction in salt intake by 2020 and 2025 respectively.²¹

At the WHO Regional Committee Meeting in September 2013 hosted in New Delhi, countries in the South East Asian Region committed to endorsing the nine global targets for 2025 and adopted a Regional Action Plan for Prevention and Control of NCDs. The Action Plan was to be monitored through a set of indicators which are

Table 1: Sodium Intakes (g/day) in India and South Africa for 1990 and 2010 (Age-standardised Estimates for persons aged 20+)

Country	Males		Females	
	1990	2010	1990	2010
India	3.95	3.88	3.61	3.56
South Africa	2.53	2.61	2.30	2.37

Source: Derived from Powles J., et al, 2013.³²

Table 2: Raised blood pressure (SBP ≥ 140 and/or DBP ≥ 90) in India and South Africa (Age-standardized adjusted estimates in Percentages)

Year	Sex	India	South Africa
2008	Male	21.3	35.2
	Female	21.0	32.4
2010	Male	26.3	30.4
	Female	25.2	28.6
2014	Male	23.4	25.2
	Female	22.6	25.2

Source: Compiled from WHO 2014.^{24,25}

consistent with the global monitoring framework. Progress reports on the implementation of the action plan were to be submitted to the WHO Regional Committee sessions in 2016, 2018 and 2021.¹⁴ In September 2013, India also hosted the Thirty-first Meeting of Ministers of Health of the WHO South-East Asia Region, where the 'New Delhi Declaration on High Blood Pressure' was adopted. The Health Ministers committed to giving high priority status to the prevention and control of high blood pressure and aimed to achieve measurable reduction in the prevalence of hypertension in the region by 2025.²²

The National Institute of Nutrition released new dietary recommendations that addressed the issue of salt reduction. The Public Health Foundation of India conducted national consultations with key stakeholders to devise salt reduction initiatives and to facilitate national policy development. In December 2012 the WHO Regional Office of South East Asia held an Expert Meeting on salt reduction in the region. Participants agreed on setting a regional target of 10% of relative reduction in population salt intake over a period of 5 years, and subsequently a 30% reduction by 2025, in accordance with global targets.¹⁴ India aims to adopt the WHO's Three Pillars of salt reduction, which include product reformulation, consumer awareness, education campaigns and environmental changes to achieve their goals for salt reduction.¹³ In India, a comprehensive stakeholder analysis involving government, industry, academia, consumers, and non-governmental organizations for salt reduction strategy is underway. Cross-sectional population surveys are going to be conducted to obtain baseline population sodium intakes and to assess existing knowledge, attitudes and behaviours relating to sodium intake. Dietary surveys and a branded food composition database will be used to identify the main sources of salt in the Indian diet to facilitate salt reduction strategy in the country.¹⁷

South Africa will implement mandatory salt reduction policies targeted at the food manufacturing industry from 2016. New regulations were added to the South African Foodstuffs, Cosmetics and Disinfectants Act of 1976 in March 2013, and were published for comment in the Government Gazette. Mandatory guidelines for salt levels were set for specific foods with high consumption rates in South Africa, such as bread, soup mixes, and spreads such as margarine and butter. The new regulation is to be enacted in two phases, with deadlines set for 30 June 2016 and 30 June 2019 respectively.²³ Following the success achieved by the United Kingdom (UK) through their salt reduction programme, South Africa has also followed the multi-pronged approach. The UK initiatives included consumer education, food reformulation, multisector partnerships and food packaging labelling.²⁴

In 2014 the advocacy group Salt Watch was formed in South Africa. The aim of this organisation was to run a series of national public awareness programmes, sponsored by the Department of Health, using various media avenues.²⁵ The inclusion of awareness campaigns to increase the population's salt reduction knowledge could greatly benefit the South African initiative due to the significance of discretionary salt.

The South African government's decision to introduce mandatory salt reduction legislation was met with some resistance from various stakeholders. Some industry representatives were in support of switching salt reduction responsibility away from manufacturers to the consumer. This was however viewed as unfeasible, because of the low nutritional literacy of a great proportion of the South African population. Further concerns were raised when the initial proposed salt level limits were published for public comment by the Minister of Health in 2012. Industry representatives opposed the salt levels proposed, as well as the time frame within which they were to be reached, and questioned how effectively the law would be enforced. The baking industry expressed their concern that the initial proposed salt level for bread would compromise its shelf-life, texture and flavour. The legislation was also criticised in the media, where the government was reported to be a "nanny state".²⁶ The media also reported on predicted increases in bread prices as a consequence of reformulation.¹¹

WAY FORWARD

As fast increasing CVDs are a threat to sustainable development of developing countries like India and South Africa, it is essential to these countries to take appropriate action to prevent and control CVDs.²⁶ These countries are confronted by high death rates occurring at the productive age and by a constraint of resources. Effective implementation of salt reduction strategies would thus help to reduce morbidity and mortality caused by excessive intakes of salt. A conjunctive use of mandatory regulations and voluntary measures to reduce salt intake would be more effective in these countries, considering their populations' dietary patterns and levels of education.²⁷ Through multi-sectoral, private and public partnerships, the average salt intake by the populations of both countries could be significantly reduced, given the range of the targets they have set. Due to a high consumption of discretionary salt, both countries could greatly benefit from consumer awareness campaigns. Countries such as the UK, China and Japan have conducted successful public education campaigns focused on reducing the use of salt during meal preparation and on the importance of

reading food labels.²⁸⁻³⁰ An effective implementation of salt reduction strategies would facilitate India and South Africa to realise the goal of decreasing premature mortality from NCDs by 25% by 2025 and 2020 respectively, which would ultimately help to realise Sustainable Development Goal 3 by 2030.

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CONFLICT OF INTEREST

No conflict of Interest.

ABBREVIATIONS USED

CVD: Cardiovascular disease; **NCDs:** Non-communicable diseases; **SDGs:** Sustainable Development Goals; **UK:** United Kingdom; **WHO:** World Health Organisation.

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