

## A Chiropractors' Perception of the Role of Biological Race in Response to Treatment: A Pilot Study

Goran Štrkalj<sup>1</sup>, Anthony Ngo<sup>1</sup>, Kerrie Park<sup>1</sup>, Gi Boem Kim<sup>1</sup> and Muhammad A. Spocter<sup>2</sup>

1. Department of Chiropractic, Macquarie University, Sydney, NSW 2109, Australia

2. Department of Anatomy, Des Moines University, Des Moines, IA 50312, USA

**KEYWORDS** Race. Chiropractic. Human Variation

**ABSTRACT** In this paper we present a pilot survey focusing on the chiropractors' views on possible racial differences in their patients' response to treatment. A questionnaire was developed and validated through this study. Results of this - pilot survey - show that the majority of respondents did not see biological race as a significant factor in chiropractic treatment and response to it. Thus, one may hypothesise that the race concept in chiropractic might not be as critical and contentious as it seems to be in the "mainstream" medicine. The inclusion of questions on patients' cultural differences is suggested for future surveys. Further studies, based on bigger and more diverse samples of chiropractors could shed more light on this issue.

### INTRODUCTION

The role of human biological variation and possible racial differences in response to medical treatment and susceptibility to certain diseases and conditions have been intensely debated among experts from diverse medical and scientific disciplines (Ellison and Goodman 2006; Koenig et al. 2008; Metroso 2006; Štrkalj 2008). These debates have already transcended the boundaries of medicine and science and have permeated into the public domain, including the popular culture. In medicine, the discussions have recently intensified, with the patenting and approval of the first "ethnic drug" (Coons 2009; Frank et al. 2010). The experts, however, remain divided on the significance of race in medicine. As recently noted, "scholars are divided on the question of whether racial categorization is an appropriate means of organizing potentially useful genetic data or pernicious reification of historically destructive typologies" (Lee et al. 2008: 1).

The reasons for this lack of consensus are many and of different nature, including the complexity of the subject and its social underpinnings (Štrkalj 2008). The biodiversity of modern humans is a result of the interplay of evolutionary forces, complexly mediated by socio-cultural factors (Molnar 2006; Relethford 2009). Humans diversified as they adapted, through the process of natural selection, to life in different

environments. This diversity was further increased or decreased by other evolutionary forces such as gene flow and genetic drift (Molnar 2006; Relethford 2009). While the level of biodiversity within the species *Homo sapiens* is rather low (Jorde and Wooding 2004), humans do display complex patterns of biological variation, some of which have clinical implications.

While the literature on race in medicine is abundant, the number of publications on race in complementary and allied medicine is rather meagre. This is also the case with chiropractic, "a health profession concerned with the diagnosis, treatment and prevention of mechanical disorders of the musculoskeletal system, and the effects of these disorders on the function of the nervous system and general health" wherein "there is an emphasis on manual treatments including spinal adjustment and other joint and soft-tissue manipulation" (WFC 2001). Chiropractic treatment is now legalised and regulated in a number of countries (WHO 2005). A small number of studies on the topic focus mainly on differences in access that various ethnic groups (specifically minorities), have to chiropractic treatment (Stevens 2007; Vindigni et al. 2009).

The aim of this study is to provide preliminary results on the possible racial differences in response to chiropractic treatments, based on the practitioners' clinical experience. This study is the first of its kind in the field of chiropractic, therefore, it also aims at initiating a discussion regarding the topic and a process wherein reliable and valid questionnaires can be developed.

*Corresponding author:*

Goran Štrkalj

Fax: +61 (0)2 9850 9389;

E-mail: goran.strkalj@mq.edu.au

## METHODOLOGY

A questionnaire was designed to assess practising chiropractors' perceptions of possible racial differences in response to a chiropractic treatment. The first part of the questionnaire contained questions regarding demographic data. The respondents were asked about their age, gender, and the type of chiropractic they practise (their "philosophy"): "straight" (utilising only traditional chiropractic techniques) or "mixed" (more modern, utilising chiropractic in conjunction with techniques and approaches from other health disciplines).

In the second part of the questionnaire, following the recommended protocols, the term "race" was first defined. This was necessary because of the numerous meanings that race is used in both technical and ordinary language (Štrkalj 2009). Following Templeton (1998: 632), "race" was defined biologically as "a geographically circumscribed, genetically differentiated population". To further clarify the meaning of the term, examples of different "races" were given so that, for example, people of European, Sub-Saharan African and North-East Asian origin were used to represent the three regionally distinct races. After this, the participants were asked: "If 30 patients are taken to be a minimum to represent one racial group, how many racial groups constitute the total body of your patients?" This question was included to prevent assessments based on a small sample of patients. The respondents who stated that they have more than 30 patients representing at least two "races" were asked the following questions:

1. Do patients belonging to different races respond differently to chiropractic treatment?
2. Do you apply different techniques to patients belonging to different races because they work better in some races than in others?
3. In your chiropractic treatment do you apply different forces to the patients belonging to different races?

The last question was included following suggestions made by one of the chiropractors interviewed during the pre-survey consultations. The participants were offered three answers, "yes", "no" and "cannot answer". Finally, all participants were asked to provide comments on any aspect of the questionnaire.

In this pilot study, only chiropractors working in Sydney and engaged as academics at the

Macquarie University (one of the three Australian universities offering a degree in chiropractic) were surveyed. These chiropractors work either as permanent academic staff in the Department of Chiropractic or as tutors employed on a casual and contractual basis. These individuals are involved in clinical practice, academic teaching (which requires being informed on the latest developments within the profession) and research. Thus, although a relatively small group, these chiropractors have considerable influence in shaping the attitudes of present and future practitioners.

The ethics approval for this project was obtained from the Macquarie University Human Research Ethics Committee.

## RESULTS

A total of 38 questionnaires were distributed and 21 (55%) were returned. Out of 21 participants, 16 (76%) had patients representing more than 2 racial groups. A summary of the responses of these 16 chiropractors are provided in Table 1.

**Table 1: Summary of the responses to each of the questions presented in the survey**

Question:	Response	Response			
		Yes	No	Cannot answer	Total
"Do patients belonging to different races respond differently to chiropractic treatment?"	Number of respondents	4	10	2	16
"Do you apply different techniques to patients belonging to different races because they work better in some races than in others?"	Number of respondents	1	15	0	16
"In your chiropractic treatment do you apply different forces to the patients belonging to different races?"	Number of respondents	2	13	1	16

Due to the small number of surveyed chiropractors and their distribution according to age, gender and type of chiropractic utilised, no statistically significant patterns were detected.

Several participants noted that they observed differences in their patients' response to treatment (primarily in their attitudes towards it) which were a result of cultural rather than racial differences.

## DISCUSSION

The majority of the surveyed chiropractors suggested that their patients did not show differences in the response to treatment. Also, the majority of respondents do not apply different techniques and different forces (in manual therapy) to the members of different races. These results suggest that the traditional racial categorizations do not help with understanding of key issues in chiropractic and that disagreements on race in chiropractic might not be as dramatic as they are in medicine. A paradigmatic example of these differences in medical discourse is the appearance of two articles, published consecutively in one of the most influential medical journals, *New England Journal of Medicine*, which presented diametrically opposed ideas on the role of race in medicine. While one paper stated that "race, at the continental level, has not been shown to provide a useful categorization of genetic information about the response to drugs, diagnosis, or causes of disease" (Cooper et al. 2003: 1168), the other argued that "there are racial and ethnic differences in the causes, expression, and prevalence of various diseases" (Burchard et al. 2003: 1174). Our preliminary study seems to suggest that the issue of race might not have the significance and controversial status in chiropractic that it has in medicine.

It should be noted that the questions used in the survey seem to be valid and that the surveyed chiropractors understood the issue presented and questions asked. Thus, the same or similar questions might be used in future studies on this subject.

As noted previously, several respondents noted that in their experience cultural differences of the patients are of relevance in chiropractic treatment. It could be beneficial to expand questionnaires used in similar future studies to include questions regarding a patients' cultural background.

Finally, it has to be stressed that due to relatively small sample, no far reaching conclusion could be made. It is hoped that future studies, carried out on a bigger and more varied sample,

will provide a better, more reliable understanding of the role of race in chiropractic treatment and that similar studies will be carried out in other complementary and allied medical disciplines.

## REFERENCES

- Burchard GE, Ziv E, Coyle N, Gomez SL, Tang H, Karter AJ, Mountain JL, Pérez-Stable EJ, Sheppard D, Risch N 2003. The importance of race and ethnic background in biomedical research and clinical practice. *New Engl J Med*, 348: 1170-1175.
- Coons SJ 2009. Have we witnessed the rise and fall of race-specific drugs? *Clin Ther*, 31: 620-622.
- Cooper RS, Kaufman JS, Ward R 2003. Race and genomics. *New Engl J Med*, 348: 1166-1170.
- Ellison GTH, Goodman AH (Eds.) 2006. *The Nature of Human Difference: Science, Society and Human Biology*. London: CRC Press.
- Frank D, Gallagher TH, Sellers SL, Cooper LA, Price EG, Odunlami AO, Bonham VL 2010. Primary care physicians' attitudes regarding race-based therapies. *J Gen Intern Med*, 25: 384-389.
- Jorde LB, Wooding SP 2004. Genetic variation, classification and 'race'. *Nature Genet*, 36: S28-S33.
- Koenig BA, Lee SS-J, Richardson SS (Eds.) 2008. *Revisiting Race in a Genomic Age*. New Brunswick: Rutgers University Press.
- Lee SS-J, Mountain J, Koenig B, Altman R, Brown M, Camarillo A, Cavalli-Sforza L, Cho M, Eberhardt J, Feldman M, Ford R, Greely H, King R, Markus H, Satz D, Snipp M, Steele C, Underhill P 2008. The ethics of characterizing difference: Guiding principles on using racial categories in human genetics. *Genome Biol*, 9: 404 (doi:10.1186/gb-2008-9-7-404).
- Metros EV (Ed.) 2006. *Racial and Ethnic Disparities in Health and Health Care*. New York: Nova Science Publishers.
- Molnar S 2006. *Human Variation: Races, Types, and Ethnic Groups*. 6<sup>th</sup> Edition. Upper Saddle River: Pearson Prentice Hall.
- Relethford J 2009. *The Human Species: An Introduction to Biological Anthropology*. 8<sup>th</sup> Edition. New York: McGraw Hill.
- Stevens GL 2007. Demographic and referral analysis of a free chiropractic clinic servicing ethnic minorities in the Buffalo, NY area. *J Manip Physiol Ther*, 30: 573-577.
- Štrkalj G 2008. *Beyond Race: A Prolegomenon for the Study of Human Biological Variation*. Saarbrücken: VDM Verlag.
- Štrkalj G 2009. A terminology for human variation studies: Defining "racialism", "racial hierarchism" and "racism". *Mankind Quart*, 50: 127-137.
- Templeton AR 1998. Human races: A genetic and evolutionary perspective. *Am Anthropol*, 100: 632-650.
- Vindigni D, Polus B, Edgecombe G, van Rotterdam J, Turner N, Spencer L, Irvine G, Walsh M 2009. Bringing chiropractic to Aboriginal communities: The Durri model. *Chiropr J Aust*, 39: 80-83.
- WFC 2001. World Federation of Chiropractic - Definition of Chiropractic. From <<http://www.wfc.org/website/WFC/website.nsf/WebPageDefinitionOfChiropractic?OpenDocument>> (Retrieved on February 14, 2011)
- WHO 2005. *WHO Guidelines on Basic Training and Safety in Chiropractic*. Geneva: World Health Organization.