

Advancing South Asian Cardiovascular Health Understanding Unique Risk Factors and Health Needs to Promote Shared Decision-Making An International Conference Focusing on South Asian Heart Health September 16-17, 2022

Executive Summary

Advancing South Asian Cardiovascular Health: Understanding Unique Risk Factors and Health Needs to Promote Shared Decision-Making: An International Conference Focusing on South Asian Heart Health was presented as CE accredited live activity held September 16-17, 2022 at the Hyatt Regency in New Brunswick, NJ. The activity was jointly provided by SKN Foundation, Eastern Virginia Medical School and Saint Peter's University Hospital, and Rutgers Biomedical and Health Sciences.

Rutgers Biomedical and Health Sciences designated this live activity for a maximum of 11.5 *AMA PRA Category 1 Credits*[™] and ANCC contact hours.

This activity was supported in part by an educational grant from Janssen Biotech, Inc.

The international conference brought together the voices of world-renowned experts in the field as well as patients and community members who live with heart disease in an effort to understand how collaborative decision-making can help improve heart health outcomes in South Asians in the United States. South Asians are among the fastest growing ethnic groups in the US, and show high rates of heart disease, as compared to other populations. With not enough research to examine their unique risks and develop effective ways to manage and care for their disease.

South Asians (SA) are among the fastest growing racial/ethnic groups in the US and bear a highly disproportionate burden of cardiovascular disease (CVD). SAs have the highest CVD rates among all racial/ethnic groups in the US, with a significantly higher prevalence of coronary artery disease (CAD), type 2 diabetes, hypertension, and a higher percentage of body fat than other immigrant groups and whites. Also, SAs tend to develop CAD at a younger age, often before 40 in men, and are more likely to die from CAD than other ethnic groups.

SAs in the US have few established resources related to their high risk for CVD, with significant implications for their health and well-being. Poor CVD outcomes management in SAs may be due to a lack of culturally and linguistically appropriate education materials for patients, inadequate patient knowledge of the healthcare system, lack of health insurance, and other social determinants - an area of further research. This diverse population also often faces tremendous cultural, socioeconomic, linguistic, and structural obstacles to achieving good health. Compounding these challenges, there is a dearth of detailed data on the unique risks, etiologic mechanisms, and effective interventions for CVD in first- and second-generation SAs in the US. This can lead to sub-optimal management of CVD, its risk factor modification, and thus increased recurrent CAD events, exacerbating racial/ethnic disparities and increasing the economic burden of CVD in the US.

In order to begin reversing this knowledge deficit, providers, patients, and shareholders need to be able to 1) identify risk factors, including social determinants, 2) learn about CVD management from worldwide programs, 3) understand the value of research participation in establishing priorities for future work on managing CVD in SAs in the US.

This international conference on South Asian cardiovascular health was designed to provide a high-quality scientific forum in a collaborative environment, which will include patients and providers. Internationally renowned researchers and clinicians led sessions addressing CVD risk factors, barriers to management, the role of Big Data, community prevention strategies, and the state of South Asian cardiovascular health in the United States from the AHA, ADA, and NIH perspectives.

This activity was designed for healthcare professionals, trainees, and students involved with or interested in the healthcare of South Asians. In addition, this activity will be beneficial for patients, families/caretakers, community leaders and members, and social institutions so they can learn how they can assist with promoting optimal health for this diverse population.

Learning Objectives: *After participating in this activity, participants should be better able to:*

- Discuss the biologic, genetic and lifestyle factors that predispose South Asians to diabetes and cardiovascular disease
- Review the epidemiology and pathophysiology of microvascular and macrovascular complications of diabetes in South Asians
- Describe new insights into the epidemiology and mechanisms of atherosclerotic cardiovascular disease in South Asians
- Discuss the biologic, diet, and lifestyle factors that predispose South Asians to hypertension, metabolic, and cardiovascular disease
- Identify the etiopathological factors that contribute to metabolic syndrome and diabetes mellitus in context of adiposity in South Asians
- Recognize the unique health beliefs of South Asians regarding cardiovascular disease and the importance of planning and delivering culturally competent preventive and educational services
- Employ cultural competent strategies during the individual doctor-patient engagement in providing an understanding the increased risk of atherosclerotic cardiovascular disease in South Asian patients and provide South Asian-specific recommendations on medications, diet, and lifestyle modifications
- Highlight and synthesize recently published literature regarding South Asians at high risk for cardiovascular conditions and disease
- Discuss available imaging modalities to assess cardiovascular risk in South Asians
- Summarize current and emerging South Asian-specific cardiovascular risk assessment tools that incorporate a higher prevalence of hypertension, diabetes, and arterial calcification, culturally specific tobacco habits, unique obesity phenotypes, and specific psychosocial factors varying by age and sex
- Highlight current national perspective of South Asians’ cardiovascular health in the United States
- Highlight and synthesize recently published research and future national research goals regarding South Asians’ cardiovascular conditions and disease
- Review current national understandings of diabetes in South Asians diabetes as relates to CVD health
- Discuss strategies for addressing health disparities in cardiovascular disease in South Asians through population health research

Participant Breakdown: There were **112 attendees**. The chart below reflects the audience’s professional status.

Profession	Participants	Percentage
Other	47	41.96%
Physician	33	29.46%
Student	8	7.14%
Other Healthcare Professional	6	5.36%
Registered Nurse	5	4.46%
Nurse Practitioner	4	3.57%
Physician, Resident	3	2.68%
Dietitian	2	1.79%

Occupational Therapist	1	0.89%
Pharmacist	1	0.89%
Physician, Fellow	1	0.89%
Psychologist	1	0.89%

The faculty presenter for this activity consisted of:

- Raj Bhopal CBE, DSc (hon), MD, BSc, MBChB, MPH**, Emeritus Professor of Public Health, Edinburgh Migration, Ethnicity and Health Research Group, Usher Institute of Population Health Sciences and Informatics, University of Edinburgh, Edinburgh, United Kingdom
- Arun Chockalingam, MS, PhD**, Adjunct Professor, Centre for Global Health, Dalla Lana School of Public Health, University of Toronto; Professor and Advisor to the Dean on Global Health, Faculty of Health, York University, Toronto, Canada; Founding Director, Office of Global Health, National Heart, Lung, and Blood Institute, National Institutes of Health
- Sunita Dodani, MBBS, MSc, PhD**, Professor of Medicine (Internal Medicine), Professor of Epidemiology, School of Health Professions, Eastern Virginia Medical School (EVMS), Founding Director, EVMS-Sentara Healthcare Analytics and Delivery Science Institute, Norfolk, VA
- Yuling Hong, MD, MSc, PhD**, Chief, Epidemiology Branch, Division of Cardiovascular Sciences, National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, MD
- Aparna Kalbag, PhD**, Research Director, SKN Foundation, Hillsborough, NJ
- Alka Kanaya, MD**, Professor of Medicine, and Epidemiology and Biostatistics, Division of General Internal Medicine, University of California, San Francisco, School of Medicine, San Francisco, CA; Co-Leader, Mediators of Atherosclerosis in South Asians Living in America (MASALA) Study
- Namratha Kandula, MD, MPH**, Professor of Medicine (General Internal Medicine) and Preventive Medicine (Epidemiology), Northwestern University Feinberg School of Medicine, Chicago, IL
- Nayan K. Kothari, MD, MACP, FRCP (Edin)**, Chair, Department of Medicine, Chief Academic Officer, Chair and Residency Program Director, Saint Peter's University Hospital; Associate Dean, Rutgers Robert Wood Johnson Medical School, New Brunswick, NJ
- Donald M. Lloyd-Jones, MD, ScM**, Professor (Epidemiology) and Chair, Department of Preventive Medicine; Eileen M. Foell Professor of Heart Research; and Professor of Preventive Medicine, Medicine (Cardiology) and Pediatrics, Northwestern University Feinberg School of Medicine, Chicago, IL; President, American Heart Association
- Ashish Mathur**, Co-Founder and Executive Director, South Asian Heart Center, El Camino Hospital, Mountain View, CA
- Naveen Mehrotra, MD, MPH**, Founder and Executive Director, SKN Foundation, Hillsborough, NJ; Director, My Whole Child Pediatrics, Piscataway, NJ; Clinical Assistant Professor of Pediatrics, Rutgers Robert Wood Johnson Medical School, New Brunswick, NJ; Adjunct Assistant Professor, Rutgers School of Public Health, Piscataway, NJ
- V. Mohan, MD, PhD, DSc**, President, Madras Diabetes Research Foundation, Chennai, India ; Chairman, Dr. Mohan's Diabetes Specialities Centre of Excellence in Diabetes Care, Southern India
- Bobby Mukkamala, MD**, Immediate Past Chair, Board of Trustees, American Medical Association
- Latha Palaniappan, MD, MS**, Professor of Medicine (Primary Care and Population Health) and, by courtesy, of Epidemiology and Population Health; Scientific Director, Precision Genomics and Pharmacogenomics in Primary Care, Stanford Division of Primary Care and Population Health, Stanford University School of Medicine; Co-Founder and Co-Director, Center for Asian Health Research and Education, Stanford Medicine, Stanford, CA;
- Sunil Parikh, MBBS, CPM**, Outreach Director and Health Navigator, SKN South Asian Diabetes Center, Saint Peter's University Hospital, New Brunswick, NJ; President, Sight Saving Academy of India

Daniel J. Rader, MD, Seymour Gray Professor of Molecular Medicine; Chair, Department of Genetics; Chief, Division of Translational Medicine and Human Genetics, Director, Preventive Cardiovascular Program. Department of Medicine; Associate Director, Penn's Institute for Translational Medicine and Therapeutics, Perelman School of Medicine at the University of Pennsylvania.

Alma Ratcliffe, MD, Vice President and Chief Clinical Transformation Officer, Saint Peter's Healthcare System, New Brunswick, NJ

Dinesh Singal MD, Director, Cardiac Catheterization Laboratory, Saint Peter's University Hospital, New Brunswick, NJ; Founder and President, Cardio Metabolic Institute of NJ

Guillermo Umpierrez, MD, CDCES, President, Medicine & Science, American Diabetes Association; Professor of Medicine, Division of Endocrinology, Metabolism, and Lipids, Emory University School of Medicine; Director, Diabetes and Endocrinology Section, Grady Memorial Hospital, Atlanta, Georgia

Salim S. Virani, MD, PhD, Professor of Medicine (Cardiology and Cardiovascular Research), Director, Cardiovascular Disease Fellowship Training Program Baylor College of Medicine, Houston, TX; Co-Director, VA Advanced Fellowship Program in Health Services Research & Development

Salim Yusuf, MD, BS, DPhil, Distinguished University Professor of Medicine, Heart and Stroke Foundation/Marion W. Burke Chair in Cardiovascular Disease, ; Founder and Executive Director, Population Health Research Institute, Faculty of Health Sciences, McMaster University; Chief Scientist, Hamilton Health Sciences, Hamilton, Canada; Principal Investigator, INTERHEART Study

The planning committee for this activity consisted of:

Sunitha Banda, Management Consultant, South Asian Community Member

Puneet Bhargava, MBA, Associate Director, Alliance Management, SK Life Science, Inc., Paramus, NJ; South Asian Community Spokesperson

Amanda Clarke, MS, Research & Community Outreach Manager, Healthcare Analytics and Delivery Science Institute, Eastern Virginia Medical School, Norfolk, VA

Daria Colbert-Carter, BA, CME Coordinator, Saint Peter's University Hospital

Renee DiMarzio, Executive Director, Department of Medicine & Family Medicine, Saint Peter's University Hospital, New Brunswick, NJ

Sunita Dodani, MBBS, MSc, PhD

Skikha Jha, MD, Resident, Saint Peter's University Hospital/Rutgers Robert Wood Johnson Medical School, New Brunswick, NJ

Aparna Kalbag, PhD

Nayan K. Kothari, MD, MACP, FRCP (Edin)

Annah Kuriakose, MD, MA, Program Director, SKN South Asian Diabetes Center and South Asian Institute, Saint Peter's University Hospital, New Brunswick, NJ

Joan C. Lynn, APN, Executive Director, Departments of Medicine and Family Practice Saint Peter's University Hospital, New Brunswick, NJ

Naveen Mehrotra, MD, MPH

Meena Murthy, MD

Sabuha Qureshi-Din, RPh, Director of Administrative Services, SKN Foundation, Hillsborough, NJ

Jagdish Talreja, Technology Entrepreneur; South Asian Community Spokesman

Audience Feedback: Participants using the traditional evaluation tool were asked to evaluate several characteristics of the activity at the conclusion of each day of the program. The information below is based on feedback received from participant evaluations. Total number of evaluations submitted: **15**

Learner Profile/Evaluation Completions

Learners' Profession/Background	Responses	Percentage
Physician	7	46.67%
Nurse	4	26.67%
Nurse Practitioner	3	20.00%
Dietitian	1	6.67%

Learners participate in this activity with other members of their interprofessional health care team.	Responses	Percentage
No	10	67.67%
Yes	5	33.33%
Not applicable	0	0.00%

Learners' primary motivation for participating in this activity	Responses	Percentage
Learn about advances in my field	4	26.67%
Meet continuing education requirements of my employer/specialty board/licensing board	2	13.33%
Acquire strategies to personally deal with patient problems or challenges	4	26.67%
Obtain information that I can bring back to my colleagues to address areas of patient care within my team, department or institution that are in need of improvement	5	33.33%

Interprofessional Collaborative Practice

Participants were asked how the activity would **impact their interprofessional collaborative practice**. Learners were able to select more than one area.

Interprofessional Collaborative Practice Core Competencies	Responses	Percentage
Use the knowledge of your own role and those of other professions to appropriately assess and address the health care needs of patients	9	60.00%
Work with individuals of other professions to maintain a climate of mutual respect and shared values	6	40.00%

Communicate with patients, families, and other health professionals in a responsive and responsible manner that supports a team approach to the promotion and maintenance of health and the prevention and treatment of disease	9	60.00%
Perform effectively on teams to plan, deliver, and evaluate patient/population-centered care	6	40.00%
No impact; the activity did not address interprofessional collaborative practice	0	0.00%

Learning Objectives

On a Likert scale of 1 to 5, with 1 being “strongly disagree” and 5 being “strongly agree” respondents indicated that **the activity met the stated objectives**. The data reflects the mean score.

Discuss the biologic, genetic and lifestyle factors that predispose South Asians to diabetes and cardiovascular disease	4.80
Review the epidemiology and pathophysiology of microvascular and macrovascular complications of diabetes in South Asians	4.80
Describe new insights into the epidemiology and mechanisms of atherosclerotic cardiovascular disease in South Asians	4.67
Discuss the biologic, diet, and lifestyle factors that predispose South Asians to hypertension, metabolic, and cardiovascular disease	4.73
Identify the etiopathological factors that contribute to metabolic syndrome and diabetes mellitus in context of adiposity in South Asians	4.73
Recognize the unique health beliefs of South Asians regarding cardiovascular disease and the importance of planning and delivering culturally competent preventive and educational services	4.80
Employ cultural competent strategies during the individual doctor-patient engagement in providing an in understanding the increased risk of atherosclerotic cardiovascular disease in South Asian patients and provide South Asian-specific recommendations on medications, diet, and lifestyle modifications	4.73
Highlight and synthesize recently published literature regarding South Asians at high risk for cardiovascular conditions and disease	4.80
Discuss available imaging modalities to assess cardiovascular risk in South Asians	4.80
Summarize current and emerging South Asian-specific cardiovascular risk assessment tools that incorporate a higher prevalence of hypertension, diabetes, and arterial calcification, culturally specific tobacco habits, unique obesity phenotypes, and specific psychosocial factors varying by age and sex	4.67
Highlight current national perspective of South Asians’ cardiovascular health in the United States	4.73

Highlight and synthesize recently published research and future national research goals regarding South Asians' cardiovascular conditions and disease	4.53
Review current national understandings of diabetes in South Asians diabetes as relates to CVD health	4.73
Discuss strategies for addressing health disparities in cardiovascular disease in South Asians through population health research	4.60

Faculty Evaluation

Participants were asked to **rate each faculty presenter related to the effective delivery of their content** on a Likert scale of 1 to 5; with 1 being "strongly disagree" and 5 being "strongly agree." The data reflects the mean score.

Raj Bhopal CBE, DSc (hon), MD, BSc, MBChB, MPH CVD Epidemic in South Asians: An Introduction to Mysteries and Hypotheses, Old and New	4.80
Yuling Hong, MD, MSc, PhD NDIH Perspective: CV Health of South Asians in the United States	4.47
V. Mohan, MD, PhD, DSc Impact of Large South Asian Community-Based Studies: Diabetes as a Risk Factor for CVD	4.87
Moderator: Aparna Kalbag, PhD Panel: South Asian Patient & Family Voices	4.80
Guillermo Umpierrez, MD, CDCES ADA Perspective: CVD Health of South Asians	4.67
Daniel J. Rader, MD Lipids and CVD Risk in South Asians	4.73
Arun Chockalingam, MS, PhD South Asian Diet and Hypertension	4.80
Alka Kanaya, MD Relationship of Genetics & Obesity to CVD in South Asians	4.73
Bobby Mukkamala, MD AMA's Efforts on Improving CVD Care Among South Asians	4.60
Salim Yusuf, DPhil An International Approach to the Prevention of CVD in South Asians	4.80
Donald M. Lloyd-Jones, MD, ScM AHA Perspective: CVD Health of South Asians	4.47
Moderator: Meena Murthy, MD Panel: Provider Perspectives on CVD Care in South Asians	4.80

Latha Palaniappan, MD, MS Use of Big Data & CVD Prevention in South Asians	4.80
Salim S. Virani, MD, PhD Heterogeneity of Risk Among Asians and South Asians and the Role of Imaging for SACVD Risk Assessment in South Asians	4.73
Ashish Mathur, BTech, MS Prevention of CVD: Lessons from a Community-based Screening Program for South Asians	4.73

Additional Speaker Comments:

- Excellent way of presentation! Thanks to all coordinators

Overall Evaluation

Participants were asked to rate **several aspects of the activity’s content balance and objectivity, commercial bias, and influence in clinical practice** on a Likert scale of 1 to 5, with 1 being “strongly disagree” and 5 being “strongly agree.” The data reflects the mean score.

This activity increased my understanding of the subject including narrative medicine	4.93
This activity will help me collaborate with other health care professionals	4.80
This activity addressed issues in cultural competency	4.87
This activity was evidence based and scientifically balanced	4.80
This activity free of commercial bias or influence	4.80
This activity met my expectations	4.73

Four (4) learners provided **additional comments or suggestions for improvement** related to the overall activity:

- Could have been done in 1 day
- Informative
- Excellent presentations
- Very good program, lots of good information. great speakers

Three (3) learners provided comments regarding **issues they are experiencing in practice and/or related to their professional responsibilities** they would like addressed in **future activities**:

- Prevention of heart attacks and strokes in Indians
- Patient compliance with routine follow up visit
- How to improve the medication compliance with diuretic therapy in CHF patients

Improvement in Competence/Intent to Change

Based on the content of the activity, learners indicated what they would do differently in the care of their patients/regarding your professional responsibilities.	Number of Participants	Percentage
Seek additional information on this topic	3	20.00%
Implement a change in my practice and/or workplace	6	40.00%
Implement a change in my practice and/or workplace and seek additional information on this topic	6	40.00%
Do nothing differently; current practice/job responsibilities reflect activity recommendations	0	0.00%
Do nothing differently; system barriers prevent me from changing my practice and/or workplace	0	0.00%
Do nothing differently; content was not convincing	0	0.00%

Learners were asked to select the **change area(s) they would consider for making improvement(s) or change(s) in their practice** as a result of their participation in the activity. The table below represents the “**Commitment to Change Areas**” selected by learners. Learners were able to select more than one area.

Commitment of Change Area	Participants	Percentage
Treatment	4	26.67%
Diagnosis and Screening	9	60.00%
Quality Improvement	1	6.67%
Patient Education	6	40.00%
Teamwork Roles and Responsibilities	0	0.00%
Clinical Patient or Interprofessional Communication	3	20.00%
Safety	1	6.67%

Learners' Intended Practice Changes and Outcomes

Diagnosis and Screening

Nine (9) learners indicated they would **implement a specific PRACTICE CHANGE** in **DIAGNOSIS AND SCREENING**

- Educating South Asians about risk factors and emphasizing the importance of early diagnosis and treatment
- Risk stratification
- Consider aggressive prevention strategies for diagnosing and early intervention in management of cardiovascular risk factors
- Recognition that the current risk score is not sufficient to safely assess true risk
- Screen all South Asians for diabetes
- Screen risk factors and communicate to patients changes to improve their risk factors
- Lipoprotein (b) assessment. Frequent counselling.
- Better use of evidence
- Lipoprotein (a) - Look at this for South Asian more as an indication of future CVA disease

Learners were asked to **reflect on the difficulty of making a practice change by indicating their CONFIDENCE in implementing a change.** The table below provides learner confidence scores in – **DIAGNOSIS AND SCREENING** on a scale of 1 to 10, with 1 being “not at all” and 10 being “completely.”

Scale	1	2	3	4	5	6	7	8	9	10	Total	Average
Responses	0	0	0	1	0	0	1	0	1	5	8	8.75

Treatment

Four (4) learners indicated they would **implement a specific PRACTICE CHANGE** in **TREATMENT**

- Advanced lipid testing, coronary calcium score
- Reinforce the follow up appointments on patients and education on diet
- Educating; Improved screening
- List more evidence based treatments.

Learner CONFIDENCE in implementing a change– TREATMENT

Scale	1	2	3	4	5	6	7	8	9	10	Total	Average
Responses	0	0	0	0	0	0	0	0	1	3	4	9.75

Clinical-Patient or Interprofessional Communication

Two (2) learners indicated they would **implement a specific PRACTICE CHANGE** in **CLINICAL-PATIENT OR INTERPROFESSIONAL COMMUNICATION**

- Be more knowledgeable of this patient population
- Try to communicate healthy lifestyle and modifications

Learner CONFIDENCE in implementing a change– CLINICAL-PATIENT OR INTERPROFESSIONAL COMMUNICATION

Scale	1	2	3	4	5	6	7	8	9	10	Total	Average
Responses	0	0	0	1	1	0	0	0	0	0	2	4.50

Quality Improvement

One (1) learner indicated they would **implement a specific PRACTICE CHANGE** in **QUALITY IMPROVEMENT**

- Make the patient encounter very effective by reinforcing the practical strategies that can help them to improve their health

Learner CONFIDENCE in implementing a change – QUALITY IMPROVEMENT

Scale	1	2	3	4	5	6	7	8	9	10	Total	Average
Responses	0	0	0	0	0	0	0	0	0	1	1	10.00

Safety

One (1) learner indicated they would **implement a specific PRACTICE CHANGE** in **SAFETY**

- Creating awareness on cardiovascular risk in South Asians and preventing cardiovascular injury.

Learners CONFIDENCE in implementing a change - SAFETY.

Scale	1	2	3	4	5	6	7	8	9	10	Total	Average
Responses	0	0	0	0	0	0	0	0	0	1	1	10.00

Teamwork – Roles and Responsibilities

None of the learners indicated they would **implement a specific PRACTICE CHANGE** in **TEAMWORK – ROLES AND RESPONSIBILITIES**

Patient Education

Five (5) learners indicated they would **implement a specific PRACTICE CHANGE** in **PATIENT EDUCATION**

- Proactively discuss about specifics of risk factor mitigation to reduce and prevent cardiovascular disease by reviewing available data and discussing importance of medication compliance
- I'll communicate and implement what I have learned
- Increasing daily activity/exercise, regular follow up, and treatment
- Help to increase the number of South Asians who need to be coerced for lifestyle change - eat healthier and increase physical activity.
- Role of statins; Dietary habits

Learner CONFIDENCE in implementing a change – PATIENT EDUCATION

Scale	1	2	3	4	5	6	7	8	9	10	Total	Average
Responses	0	0	0	0	0	0	1	2	1	1	5	8.40