Researching health transitions & building research partnerships

Kafui Adjaye-Gbewonyo & Annibale Cois

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University of Greenwich

Outline

- Background and interests
- Project overview
- Establishing our collaboration & applying for the grant

Kafui's Background & Interests

- Trained in public health: doctorate in social & behavioral sciences
- Specific area: Social epidemiology
- Interests:
  - Socio-contextual and structural determinants of health
  - Non-communicable diseases (NCDs) in low- and middle-income countries, esp. Africa region
- Methods:
  - Mostly quantitative (large population surveys, econometrics)
  - Recent qualitative work (focus groups and interviews)

Annibale's background & interests

- Doctorate in Public Health
- Specific area: Epidemiological modelling
- Interests:
  - Epidemiology of NCDs risk factors in LMICs
  - Statistical models for heterogenous data sources
  - Measurement and other sources of error in population surveys
- Methods:
  - Structural Equation Modelling
  - Bayesian multilevel modelling

Project overview: Explaining population trends in cardiovascular risk: A comparative analysis of health transitions in South Africa and England

Project overview

The project is funded by the ESRC Secondary Data Analysis Initiative:

- Research Team:
  - Kafui Adjaye-Gbewonyo, University of Greenwich
  - Dr Annibale Cois, Stellenbosch University/South African Medical Research Council

Research questions

1. What are the population trends in CVD risk in South Africa since its first national health survey in 1998?
2. To what extent are these trends explained by demographic, behavioural, social, environmental, health-related and/or other factors?
3. How do these results compare to those in a high-income country with a different infectious disease profile such as England over the same time period?

Methods

Quantitative research study

Sample & data sources:

- 11 Nationally-representative cross-sectional surveys from South Africa 1998 through 2017 (DHS, NIDS, SAGE, SANHANES)
- Health Surveys for England, 1998-2017

Datasets

South African Surveys				England Surveys			
Survey	Year	Adult Ages	Sample Size	Survey	Year	Adult Ages	Sample Size
DHS	1998	15+	13,827	HSE	1998	16+	15,908
				HSE	1999	16+	14,642
				HSE	2000	16+	10,481
				HSE	2001	16+	15,647
				HSE	2002	16+	10,330
DHS	2003	15+	8,115	HSE	2003	16+	14,836
				HSE	2004	16+	13,520
				HSE	2005	16+	10,303
				HSE	2006	16+	14,142
SAGE	2007-8	18+	4,223	HSE	2007	16+	6,882
NIDS	2008	15+	16,872	HSE	2008	16+	15,098
				HSE	2009	16+	4,645
NIDS	2010-11	15+	21,874	HSE	2010	16+	8,420
NIDS	2012	15+	22,457	HSE	2011	16+	8,610
SANHANES	2012	15+	7,436 [a]	HSE	2012	16+	8,290
NIDS	2014-15	15+	22,741	HSE	2013	16+	8,795
SAGE	2014-15	18+	26,804	HSE	2014	16+	8,077
				HSE	2015	16+	8,034
DHS	2016	15+	5,685	HSE	2016	16+	8,011
NIDS	2017	15+	30,109	HSE	2017	16+	7,997

Analysis

- Examine population trends in CVD risk using non-laboratory based CVD risk score (blood pressure, BMI, smoking status, hypertension treatment, diabetes diagnosis, age, sex)
- Explore potential explanatory variables: demographic, socioeconomic, behavioural, health, healthcare, geographic, environmental and psychosocial variables at multiple levels
- Use econometric and structural equation modelling

Analysis, cntd.

- The risk score will be calculated by using the following model:

$$CVDrisk = \beta_1 \cdot \ln(age) + \beta_2 \cdot systolic\ blood\ pressure + \beta_3 \cdot Current\ smoker + \beta_4 \cdot Diabetes\ diagnosis + \beta_5 \cdot Hypertension\ treatment + \beta_6 \cdot BMI$$

- Where CVDrisk represents the risk of developing any cardiovascular disease event in 5-years, and the β coefficients are reported by Gaziano and colleagues (34) and differ between men and women.

Outputs & Impact

- Harmonised dataset & code made publicly available
- Stakeholder group
- Policy brief/report
- Public engagement activities and media
- Trainings

Stakeholders, partners & supporters

- Health and Social Surveys Research Group (HSE team), UCL
- Health Systems Trust
- DataFirst
- African Health Research Institute (AHRI) & South African Population Research Infrastructure Network (SAPRIN)
- Health & Social Research Council, SA

Novel Contributions

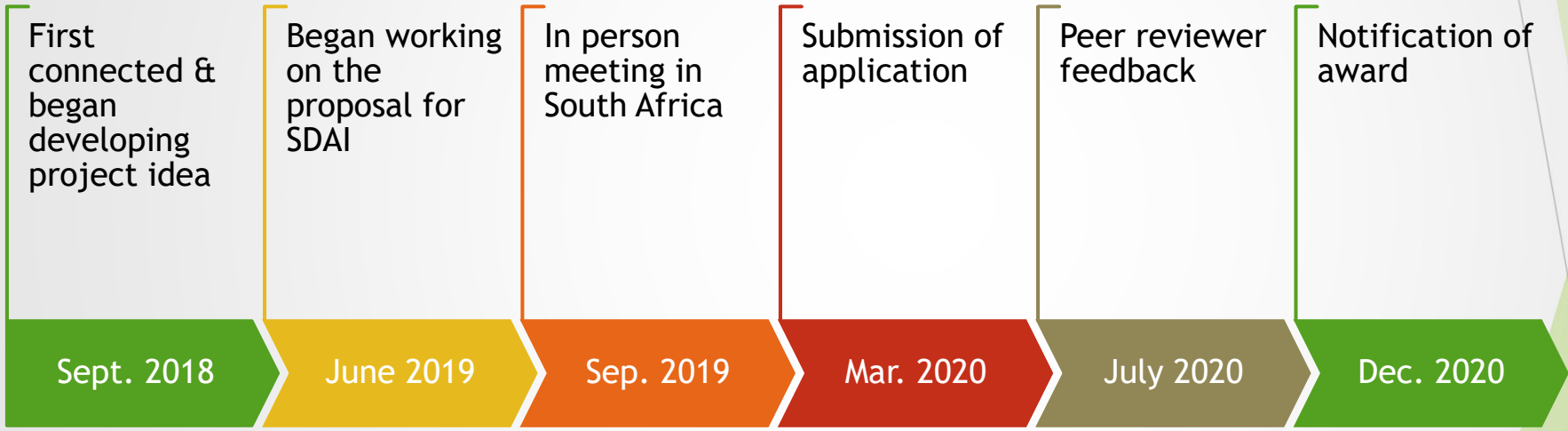
- Examining trends in total CVD risk in South Africa using a validated risk score in addition to individual risk factors
- Quantifying contributions of various factors to these trends, including psychosocial, environmental and contextual variables, at multiple levels
- Exploring trends over nearly a 20-year period
- Comparative analysis, comparing transitions in English context
- Using innovative structural equation modelling techniques to account for variation across surveys

Establishing our collaboration & applying for the grant

Timeline

- September 2018: First connected & began developing project idea
- June 2019: Began working on the proposal for SDAI
- September 2019: In person meeting in South Africa
- March 2020: Submission of application
- July 2020: Peer reviewer feedback
- December 2020: Notification of award

Timeline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Questions?