Title: Health Care Utilisation and Internal Migration in Rural and Urban South Africa

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Short Abstract

Within South Africa, geographic mobility is high as people engage in both permanent resettlement, and temporary movement. Such mobility may compromise health care access and utilisation. The objective of this paper is to explore health care utilisation and its determinants in a cohort of internal migrants and permanent residents originating from the Agincourt study site in South Africa's rural northeast. A 5-year cohort study of 3800 individuals aged 18-40 commenced in 2017. Data have been collected from 1355 Agincourt residents and 433 temporary, urban-based migrants, and are analysed using descriptive statistics and logistic regression models. Results suggest that health service utilisation may differ by migrant status and gender. Participants residing in Agincourt are significantly more likely to have accessed health services in the preceding year as compared with temporary migrants, with females being more likely than males to have utilised health services.

Extended Abstract

Background

Urbanisation has been proceeding more rapidly in Africa than many other regions, with Africa's urban population expected to increase from 40% to 56% by the year 2050 (United Nations, 2014). Within South Africa, geographic mobility is high as people engage in both permanent resettlement, as well as circular and temporary movement. Circular migration was historically connected with the Apartheid system of movement control, and typically involved males oscillating between work places on the mines and rural homes (Wilson & Ramphele, 1989). In contemporary South Africa, internal migration is undertaken by a diverse range of individuals. Recent analysis of South Africa's 2011 population census highlights age, gender and education as key individual-level predictors of internal migration (Statistics South Africa, 2015). Internal migration is most commonly undertaken by young adults and internal migration streams, while still predominantly male, are becoming increasingly feminised (Statistics South Africa, 2015).

Mobility, which results in an altered set of circumstances, may compromise health care access and continuity of care for individuals requiring treatment for chronic conditions. South Africa is experiencing an ongoing infectious disease burden with an estimated 12.6% of the population HIV positive (Statistics South Africa, 2017), while a growing burden of non-communicable diseases has been observed (Mayosi et al., 2009; World Bank, 2013). In the context of this dual burden of disease, not enough is known about issues concerning health care access and utilisation amongst internal migrants in South Africa.

Objectives

The objective of this paper is to explore health care utilisation in a cohort of internal migrants and rural-based permanent residents originating from the Agincourt Health and Demographic Surveillance System (HDSS) in South Africa's rural northeast. The paper will examine the profile of migrants and non-migrants and identify patterns and determinants of health care utilisation in the cohort.

Methods

The Agincourt Health and Demographic Surveillance System (HDSS) is located in the sub-district of Bushbuckridge, Mpumalanga province and is situated about 500 kilometres north east from Johannesburg, South Africa's main metropolis. The Agincourt HDSS was established in 1992 and has monitored all births, deaths and in- and out-migrations taking place within the 400 square kilometre study site since inception. The surveillance population currently comprises 116 000 people living in 31 villages (Kahn et al., 2012). Included in the population under surveillance are temporary migrants, defined as household members who are away from home for more than 6 months in the previous year, but retain significant links to their origin households (Ginsburg et al., 2016). The majority of Agincourt temporary migrants relocate to urban areas of the Gauteng province where they are more likely to find employment opportunities (Collinson et al., 2014; Ginsburg et al., 2016), while others remain in close by areas 50-150km away.

Following a successful pilot study undertaken in 2012, a 5-year cohort study of 3800 individuals aged 18 to 40 commenced in 2017. This Migrant Health Follow-up Study (MHFUS) aims to better understand relationships between migration, urbanisation, and health in a transition setting through following-up migrants who leave the Agincourt study area, usually to access employment. The cohort was randomly selected from the Agincourt HDSS longitudinal research platform and includes residents of the Agincourt sub-district and temporary migrants who maintained contact with their origin households. While the final version of this paper will contain results for the entire enrolled cohort, to date data on the first wave of the study have been collected from 1788 individuals. Of these respondents, 1355 (76%) are residents of the Agincourt HDSS and 433 (24%) are temporary

migrants living in the Gauteng province (Johannesburg and Tshwane). Of the rural-based residents, 56% are female, while 42% of the temporary migrants interviewed to date are female. This paper uses descriptive statistics and logistic regression models to examine health service utilisation among migrants and residents of the Agincourt HDSS.

Results

Of the Agincourt HDSS residents, 57% reported having utilised health services in the preceding year, as compared with 49% of Johannesburg temporary migrant respondents ($\chi_{(2)}^{1}$ = 9,69; p=0.002). Migrants (27%) were significantly more likely to have accessed private health facilities as compared with rural residents (6%) ($\chi_{(2)}^{1}$ = 77,29; p=0.000).

Table 1 presents results of a logistic regression model with temporary migrant status as the outcome variable. Those with a matric or post school education have 4,16 and 4,55 times the odds of undertaking temporary migration, relative to those with lower levels of education. The odds of a female temporary migrant is 0,68 times the odds of a male.

Logistic Regression analyses of health care utilisation are presented in Table 2. The model for the Agincourt HDSS residents revealed that females were as much as seven times as likely to have used health services as compared with males, with the odds of service utilisation lower for individuals who were employed and those with post-school education (Model 1). Having received a previous diagnosis of a chronic condition was positively associated with service use. The odds of a person who indicated that they had been diagnosed with a chronic illness having utilised health services was 12 times that of someone who had received no prior diagnosis of a health condition. In the model for health care utilisation among temporary migrants, females had 1,92 times the odds of accessing health services as compared with males (Model 2). However, in this analysis of temporary migrants, education level, employment status and having received a prior diagnosis of a chronic health condition were not significantly associated with health service utilisation. Model 3 presents the pooled models, which highlights the significance of gender, prior diagnosis and education level on the odds of health service utilisation.

Conclusion

Provisional results suggest that health service utilisation and its determinants may differ by migrant status. Participants residing in the Agincourt HDSS are significantly more likely to have accessed health services in the preceding year as compared with temporary migrants. Female Agincourt residents and temporary migrants were more likely than males to have utilised health services, with the odds of female urban migrants having accessed health services at their destinations being lower than that of female permanent residents of the rural study area.

Information on health service access and utilisation amongst internal migrants can greatly assist in developing meaningful public health interventions that seek to improve on the continuity of health care delivery across space. This baseline analysis using data from the first wave of the MHFUS study will contribute important evidence towards improving our understanding of these dynamics.

Funding

Financial Support: NI Grant 1R01HD083374,"Migration, Urbanization and Health in a Transition Setting." (PI: M. White). The MRC/Wits Rural Public Health and Health Transitions Research Unit (Agincourt) acknowledges funding from The Wellcome Trust, UK (grants 058893/Z/99/A; 069683/Z/02/Z; 085477/Z/08/Z; 085477/B/08/Z), and the Medical Research Council, South Africa. We gratefully acknowledge the South African Medical Research Council for funding Carren Ginsburg's Career Development Award

Table 1: Logistic regression analysis: temporary migrants

	Odds	95% Confidence Interval
N	1778	
Sex (Ref: male)	0,68	(0,53; 0,87)
Completed Matric	4,16	(3,12; 5,54)
Post school qualification	4,55	(3,12; 6,65)
Employed	3,97	(2,96; 5,33)
Not in labour force	1,85	(1,27; 2,70)
Age	1,02	(0,99; 1,04)
Constant	0,04	(0,02; 0,09)
-2 log likelihood	-834.84	

$\chi_{(6)}^2 = 281,35$; p=0.000

Table 2: Logistic regression analyses: health care utilisation

	Model 1: Agincourt non-migrants		Model 2: Gauteng temporary migrants		Model 3: Pooled Analysis	
	Odds ratio	95% Confidence Interval	Odds ratio	95% Confidence Interval	Odds ratio	95%Confidence Interval
N	1355		423		1778	
Sex (Ref: male)	7,03	(5,40; 9,15)	1,92	(1,25; 2,93)	4,82	(3,88; 5,98)
Ever diagnosed	12,38	(6,69; 22,91)	1,77	(0,78; 4,02)	7,21	(4,54; 11,45)
Completed Matric	0,84	(0,63; 1,11)	0,69	(0,42; 1,15)	0,75	(0,59; 0,95)
Post school qualification	0,52	(0,33; 0,80)	1,22	(0,65; 2,27)	0,70	(0,50; 1,00)
Employed	0,69	(0,50; 0,95)	1,45	(0,87; 2,41)	0,88	(0,68; 1,13)
Not in labour force	0,69	(0,49; 0,97)	0,86	(0,44; 1,67)	0,64	(0,48; 0,84)
Age	1,01	(0,99; 1,04)	1,00	(0,99; 1,00)	1,00	(1,00; 1,00)
Migrant status (Ref: non-migrant)	~	~	~	~	1,03	(0,79; 1,34)
Constant	0,36	(0,17; 0,74)	0,70	(0,36; 1,34)	0,66	(0,50; 0,86)
-2 log likelihood	-711,13		-282,19		-1027,28	
	$\chi_{(7)}^2$ = 429,16; p=0.000		$\chi_{(7)}^2$ = 21,48; p=0.003		$\chi_{(8)}^2$ = 392,82; p=0.000	

References

Collinson, M. A., White, M. J., Bocquier, P., McGarvey, S. T., Afolabi, S. A., Clark, S. J., . . . Tollman, S. M. (2014). Migration and the epidemiological transition: Insights from the Agincourt sub-district of northeast South Africa. *Global Health Action, 7*, 23514. doi: 10.3402/gha.v7.23514

Ginsburg, C., Collinson, M. A., Iturralde, D., van Tonder, L., Gómez-Olivé, F. X., Kahn, K., & Tollman, S. (2016). Migration and settlement change in South Africa: Triangulating Census 2011 with longitudinal data from the Agincourt Health and Demographic Surveillance System in the rural north-east. *Southern African Journal of Demography, 17*(1), 133-198.

Kahn, K., Collinson, M. A., Gomez-Olive, F. X., Mokoena, O., Twine, R., Mee, P., . . . Tollman, S. M. (2012). Profile: Agincourt Health and socio-Demographic Surveillance System. *International Journal of Epidemiology, 41*(4), 988-1001. doi: 10.1093/ije/dys115

Mayosi, B. M., Flisher, A. J., Lalloo, U. G., Sitas, F., Tollman, S. M., & Bradshaw, D. (2009). The burden of non-communicable diseases in South Africa. *Lancet, 374*(9693), 934-947. doi: 10.1016/s0140-6736(09)61087-4

Statistics South Africa. (2015). Census 2011: Migration dynamics in South Africa *Report No. 03-01-79*. Pretoria: Statistics South Africa.

Statistics South Africa. (2017). Mid-year population estimates, South Africa: 2017 *Statistical Release P0302*. Pretoria: Statistics South Africa.

United Nations. (2014). World urbanization prospects: The 2014 revision. New York: Department of Economic and Social Affairs, Population Division.

Wilson, F., & Ramphele, M. (1989). *Uprooting poverty: The South African challenge*. Cape Town: David Philip.

World Bank. (2013). The global burden of disease: Generating evidence, guiding policy: Sub-Saharan Africa regional edition. Seattle, WA: Institute for Health Metrics and Evaluation, World Bank.