Are nurses good dictators?

The use of experimental economic games to study nurses' altruism in South Africa, Kenya and Thailand

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Rationale

Recent developments in **behavioural economics** have proved how concern for others' well-being can drive individuals' decisions, as opposed to the traditional economic perspective that only considers self-interest as a driving factor.

Motivations going beyond narrow self-interest, such as vocation ('helping the community') or altruism ('serving others'), have sometimes been identified as important factors to understand health workers. For example, some studies suggest that vocational and **altruistic motivations matter for nurses**, to the extent that they could be less sensitive to monetary incentives.
Investigating such motivations can provide new insights into how to motivate new workers. This is particularly relevant in developing countries where scarce resources are allocated to the training of health workers who then leave the public sector or are reluctant to work in areas where they are needed most.

This **first step** in the analysis of the role of altruism in nurses' labour market decisions provides new evidence on the nature and determinants of altruism amongst nurses in Kenya, Thailand and South Africa.

Methods

Experimental economics and the dictator game. Economic experiments have recently been promoted as measurement tools for social preferences because they ask participants to make choices for real money, which is considered as an incentive to reveal their true behaviour and avoid self-presentation bias of attitudinal questions. To measure altruism, a 2-player game called the dictator game (DG) is normally used. Following the DG rules, a 1st player, (called the "dictator"), is given a sum of money and is told to freely allocate this money, between himself and the 2nd player, who is entirely passive, and will usually not know the identity of his potential benefactor.

Data collection. Final year nursing students from **Kenya** (N=345), **South Africa** (N=377) and **Thailand** (N=342) had to decide how much to give to three different recipients (another unknown student, a patient or a poor person). In each country, the game endowment was worth the daily salary of a newly-qualified nurse (approx. £1.6 in Kenya, £6.7 in South Africa and £3.2 in Thailand). Participants were also surveyed about their socio-demographic characteristics and job intentions and vocational attitudes.

Analysis. Altruism is measured by the proportion of money given up (A_1 to fellow students, A_2 to a patient and A_3 to a poor person). Multivariate analysis was performed to investigate the determinants of altruism, and to what extent altruism was correlated to job intentions.

Results

How altruistic are nurses?

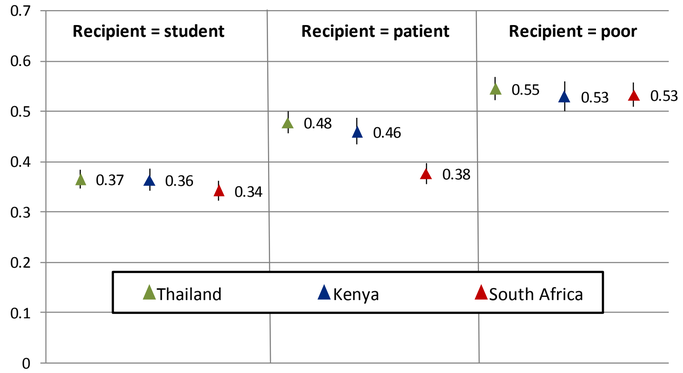

Figure 1: Mean amount given by nurses to recipients (with 95% CI), by country and type of recipient

Several results emerge from the basic patterns of altruism measured across the three countries and recipients:

- a marked increase in the money given to the three recipients, students prompting the lowest gifts and the poor the highest;
- no differences in altruism between Thailand and Kenya;
- nursing students in South Africa are significantly more selfish towards patients than their Thai and Kenyan colleagues.

What determines nurses' altruism?

Table 1 summarises findings from the logit models that tested the influence of training, socio-demographic and motivational characteristics on showing more altruistic behaviours towards poor and patient recipients. Three aspects emerge from this analysis:

1. In the 3 countries there is a significant relationship between measures of altruism provided by the DG and responses to more standard questions on vocational and motivational attitudes.
2. Altruism amongst nursing students in Kenya and Thailand seems to be driven by similar factors. Students from rural areas are more generous than those born in cities, while those who are more sensitive to extrinsic rewards will show less altruism in the DG.
3. South Africa confirms its atypical profile, with students from rural origins (or trained in more rural areas) being more selfish than those from urban areas, as are male and younger nursing students. Interestingly, those who chose nursing first as a career behaved more altruistically than those who had not, while being sensitive to extrinsic rewards was not significant.

Table 1: Odds-ratios of factors influencing giving more than the average to patient ($A_2>\bar{A}_2$) and poor ($A_3>\bar{A}_3$) recipients

	Patient recipient models			Poor recipient models		
	Kenya	South Africa	Thailand	Kenya	South Africa	Thailand
Socio-demographic characteristics						
Male	0.97	**0.53***	0.52	0.79	0.61	0.47
Being born in a rural area	**1.66***	0.80	**2.11****	0.99	**0.51***	1.34
Younger (<25y)	0.54	0.69	-	0.59	**0.56***	-
Having no child	0.63	1.19	-	0.80	0.93	-
Training characteristics						
Having trained in an urban area [a]	0.95	1.41	0.98	1.06	**1.68****	0.79
Trained at university	n/a	0.92	-	-	**1.98****	-
Trained as upgrader	1.06	-	-	0.94	-	-
Vocational and extrinsic motivation						
Nursing was first career choice	0.90	**2.20*****	-	0.99	**1.47****	-
Intend to work in the public sector	1.08	0.57*	1.45	0.74	0.71	1.13
1st reason to choose a job is income	1.40	0.95	**0.46****	0.87	1.04	0.74
More extrinsically motivated [b]	**0.52*****	0.75	0.81	**0.66***	1.07	0.79

Notes: empty cells denote the fact that information was not collected or category is not relevant for the country sample (e.g. all nurses in Thailand were less than 25 years old).
Statistical significance of the results: ***p<0.001 ** p<0.01 *p<0.1
[a] Bangkok in Thailand, Pretoria/Johannesburg in SA, Nairobi in Kenya.
[b] Binary variable equals to 1 when an the individual score obtained from a principal component analysis of 3 attitudinal variables of extrinsic motivation is greater than the average (Cronbach's α of these indexes: 0.54 for Kenya, 0.41 for SA and 0.67 for Thailand).

Discussion

In the **experimental economic literature**, donations to (anonymous) fellow student recipients in the DG range from 12% to 36%, nurses are thus more generous than traditional subjects (usually economic students). Future research comparing nursing students to economic students in the same settings and experimental conditions will allow us to test whether nurses are indeed more altruistic. Other experimental studies have also found that framing recipients as needy or worthy recipients increased altruism. Furthermore, younger and male participants have also shown less generosity in other dictator games. Cross-country experiments have seldom been carried out, but when differences were found, as we did between SA and the other 2 countries, the role of social norms has often been highlighted.

This is the **first study to use experimental economics combined with survey data** to compare the nature and determinants of nurses' altruism in three different developing countries, and particularly explore its link to vocational motives. Results suggest that nurses who are intrinsically motivated (more generous in DG) report less sensitivity to extrinsic rewards.

Conclusion

Social preferences (e.g. altruism, trust) have proven to be important in other fields and should be investigated in the field of health personnel attitudes and behaviours. The present findings represent the first step in a study that seeks to explore the role of altruism in nurses' job choices. It already **suggests a relationship altruism in DG and vocational or extrinsic motivation**.

Future steps of this research will explore the relationship between altruism and stated and revealed preferences for positions in under-served areas. If altruism towards others, as measured through economic experiments, is a key underlying value driving nurses' decisions and attitudes in their professional lives, innovative interventions could be implemented in order to nurture such values and makes sure they are not contradicted by the wrong incentives.

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