Social Science & Medicine 122 (2014) 113–121

Contents lists available at ScienceDirect

Social Science & Medicine

journal homepage: www.elsevier.com/locate/socscimed

How do dual practitioners divide their time? The cases of three African capital cities

Barbara McPake [a, b], Giuliano Russo [c, d, *], Fu-Min Tseng [b]

[a] Nossal Institute for Global Health, University of Melbourne, Carlton, Vic. 3010, Australia
[b] Institute for International Health Development, Queen Margaret University, Edinburgh, UK
[c] Instituto de Higiene e Medicina Tropical, Universidade Nova de Lisboa, International Health and Biostatistics Unit, Rua da Junqueira 100, 1349-008, Lisbon, Portugal
[d] Centro de Malária e Outras Doenças Tropicais, Instituto de Higiene e Medicina Tropical, Rua da Junqueira 100, 1349-008, Lisbon, Portugal

ARTICLE INFO

Article history:
Received 17 March 2014
Received in revised form
16 October 2014
Accepted 17 October 2014
Available online 18 October 2014

Keywords:
Cape Verde
Guinea Bissau
Mozambique
Physician dual practice
Dual practice time allocation
Physicians' economic behaviour
Physicians in Africa
Physicians' allocative decisions

ABSTRACT

Health professionals dual practice has received increasing attention, particularly in the context of the universal health coverage movement. This paper explores the determinants of doctors' choices to become a dual practitioner and of dual practitioners' choices to allocate time to the private sector in the capital cities of Mozambique, Guinea Bissau and Cape Verde. The data are drawn from a survey conducted in 2012 among 329 physicians. We use a two-part model to analyse the decision of both public and private practitioners to become dual practitioners, and to allocate time between public and private sectors. We impute potential earnings in public and private practice by using nearest-neighbour propensity score matching.

Our results show that hourly wage in the private sector, number of dependents, length of time as a physician, work outside city, and being a specialist with or without technology all have a positive association with the probability of being a dual physician, while number of dependents displays a negative sign. Level of salaries in the public sector are not associated with dual practice engagement, with important implications for attempts aimed at retaining professionals in the public sector through wage increases. As predicted by theory that recognises doctors' role in price setting, earnings rates are not significant predictors of private sector time allocation; personal characteristics of physicians appear more important, such as age, number of dependents, specialist without technology, specialist with technology, and three reasons for not working more hours in the private sector. Answers to questions about the factors that limit working hours in the private sector have significant predictive power, suggesting that type of employment in the private sector may be an underlying determinant of both dual practice engagement and time allocation decisions.

1. Introduction

The phenomenon of health professionals 'dual practice', or the concomitant holding of posts in both public and private practice has received increasing attention, especially in the context of the universal health coverage movement. Whether of doctors, nurses or other health professionals, the phenomenon has significant implications for health policy and for the achievement of universal health coverage in the sense that "all people can use the promotive, preventive, curative, rehabilitative and palliative health services they need, of sufficient quality to be effective, while also ensuring that the use of these services does not expose the user to financial hardship." (WHO, 2014). As efforts proceed to merge and consolidate elements of the health sector towards unified systems at the national level, the processes involved in dual practice are among those that can continue to fragment and stratify on both demand and supply sides of the health market, frustrating policy intentions.

In this paper, we aim to explore the factors that influence medical doctors' decision to engage in dual practice and the decision about time allocation between public and private sector jobs. Our data are derived from the capital cities of three low and middle income countries in Africa where the need to extend coverage and develop universal health systems is perhaps greatest.

Despite increasing attention and a growing literature, the processes involved in dual practice are little understood. Labour

* Corresponding author. Instituto de Higiene e Medicina Tropical, Universidade Nova de Lisboa, Rua da Junqueira 100, Lisboa, Portugal.
E-mail addresses: grusso@ihmt.unl.pt, giuliomoz@gmail.com (G. Russo).

http://dx.doi.org/10.1016/j.socscimed.2014.10.040
0277-9536/

economics suggests a number of theoretical starting points. Decisions to participate in the labour market depend on the trade-off between income and leisure. Individuals maximise their utility from consumption and leisure activities subject to the time constraint (total available hours in the week) and work opportunities (Kaufman and Hotchkiss, 2003). An increase in the wage rate affects the number of hours of work offered through two routes: the substitution effect by which the relative return to work over leisure increases, resulting in an increase in the number of hours of work offered and the income effect by which the supplier can afford more of the relatively high priced leisure, resulting in a reduction in the number of hours of work offered. Which of the two dominates depends on the (unobservable) utility function of the labour supplier but empirical evidence suggests that the income effect begins to dominate at higher wages and leads to the postulation of a 'backward bending supply curve': upward sloping for lower levels of wage but bending backwards after some wage threshold (Ehrenberg and Smith, 2012; Scott, 2006).

As Farley (1986) highlights, the problem with seeking to apply this kind of model to medical labour supply is that doctors both supply labour and ration supply and demand themselves in advising patients on their use of services. This implies that physicians are 'price setters' rather than 'price takers' and that a supply curve cannot be estimated (Farley, 1986).

One model that recognises this problem is the target income hypothesis (Newhouse, 1970), which suggests that where income falls below an established target level, demand is induced to support its recovery but that doctors avoid this behaviour (which causes them disutility) otherwise. Other models propose a more continuous trade-off between income and the disutility of demand inducement (Evans, 1974; Farley, 1986; Pauly, 1980; Wilensky, 1980) predicting an equilibrium level of demand inducement, while a third category of models assume some ability to discriminate between demand inducing and ethically practising doctors on the part of consumers acts to control demand inducement (T. G. McGuire, 1983; Satterthwaite, 1979). More recently Rizzo and Zeckhauser have suggested that the target income hypothesis can explain differences between male and female physician earnings (Rizzo and Zeckhauser, 2007).

A few models address the question of how doctors make decisions about engaging in more than one form of employment. González (2004) explains the dual practice phenomenon by doctors' public practice providing a signal of service quality that enables increased earning in the private sector (González, 2004). Brekke and Sørgard (2007) explain the mixed health care system phenomenon by which physicians spend some time in both public and private sectors by efficient public sector rationing: the conditions for which patients have the highest willingness to pay (for example because they are most severe) are rationed in. By restricting supply in the public sector, doctors increase demand and price in the private sector but reach a limit to fully shifting activity to the private sector determined by patients' ability to pay (Brekke and Sørgard, 2007). Other models (Barros and Olivella, 2005; Biglaiser and Albert Ma, 2007; González, 2004; A. Rickman and McGuire, 1999) take the existence of dual practice as a starting point and analyse incentives for welfare related outcomes such as efficiency, cream skimming and quality of care. These are less relevant to our purpose.

There has been limited empirical estimation of the relationships involved between the variables of these models. Culler and Bazzoli (1985) find the choice to undertake a second medical job is elastic to salary, hours of work and education debt in the United States (Culler and Bazzoli, 1985). Sæther (2009) finds that the impact of changing relative levels of remuneration from public and private work in Norway results in a switch of time allocation rather than overall change in hours worked (Sæther, 2009). Sæther (2005) finds that the impact of increasing public hospital wage on physicians' working hours in the United States is rather limited, but that increases in private sector fees result in physicians shifting hours from public to private sector (Sæther, 2005). Crucially, the theories differ with respect to whether or not they anticipate a supply curve operating on either or both of the public and private sides.

Amporfu (2010) highlights a range of novel features of the dual practice phenomenon in low and middle-income countries (LMICs) (Amporfu, 2010), in particular focussing on the significance of charges on both sides of the dual practice arrangements and their implications for the model of Rickman and McGuire (1999). Despite a volume of mainly descriptive literature on dual practice in LMICs (Berman and Cuizon, 2004; Ferrinho et al., 2004; Gruen et al., 2002; Gupta and Dal Poz, 2009; Roenen et al., 1997; Sherr et al., 2012) there is no empirical evidence estimating the determinants of doctor time allocation in such countries that we have been able to locate.

Russo et al. (2013) lay some of the groundwork for this paper by describing the characteristics of dual practice among physicians in the three settings addressed here, and the individual level correlates of dual practice decisions (Russo et al., 2013). The data set used in this paper is the same, and that paper provides a more detailed description of the method used to derive that data set.

In Cape Verde's capital city Praia there were about 10 physicians per 10,000 inhabitants in 2012; public sector salary are comparatively high and decompressed (between USD 903 and 1802 per month), representing almost five times the national Gross Domestic Product (GDP) per capita. Demand for public medical services is comparatively moderate, and prices for a private outpatient visit was less than USD 30 in 2012 (Russo et al., 2013).

In Bissau supply of physicians is limited (3.27/10,000 population in 2012). Demand for medical services moderate, possibly because of the populations limited ability to pay and the existence of illegal charges in the public sector (Einardóttir, 2011). Linked the country's low GDP per capita and the presence of private services offered within public services, the formal private health sector is still underdeveloped. Public sector pay for physicians is low and compressed (USD 315–344 per month), representing 3.6 times the country's GDP per capita in 2012.

In 2012 in Maputo there were 6.64 physicians per 10,000 population; demand for both public and private services is sustained, and the private sector rapidly developing, following the recent discovery of natural resources. Public sector pay is high and decompressed by national standards (USD 645–989 per month in 2012), although life in the capital city Maputo is becoming expensive, rapidly distancing itself from the cost of living in the rest of the country (Russo et al., 2013).

2. Methods

The objective of our work is to investigate the determinants of physicians' decision to engage in dual practice and on their time allocation between public and private sectors.

The empirical challenges of better understanding dual practice decisions in low and middle income country contexts are considerable. A full test of any of the theoretical models described in the introduction was not considered feasible; however, we sought to test the question whether a supply curve exists operating on either or both of the public and private sides by examining relationships with earnings rates in the two sectors. We assume that the choices involved are welfare-maximising choices constrained differently by personal circumstances such as earning opportunity and other household responsibilities. We therefore sought further to test whether choices made appear to be modified by the personal