APPLYING STRATEGIC CONFIGURATIONS TO DEMONSTRATE PRIMARY HEALTH CARE IN AUSTRALIA IS NOT A SWATHE OF VANILLA

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ABSTRACT

This study investigates a configurational approach to the categorization of primary care medical practices. The resulting four configurations were: Independent practices, Large mass-patient co-located practices, Large practices dealing with complexity and hospitals, and Isolated practices. These four configurations incorporate, but move beyond, simplistic characterizations such as location that are common in the primary care literature, and highlight the complexity facing health policy interventions.

INTRODUCTION

There is an overall shortage of GPs in Australia as well as a maldistribution between rural and urban centres, where rural areas are relatively under-serviced [2]. From a health policy perspective, the primary care sector is characterized by many small organizations that are treated as a homogeneous group with policy prescriptions rarely considering the complexity of the sector [3]. This assumption that the sector is a swathe of vanilla needs investigation.

Initial steps include moving from solo versus group categorizations to three types: solo, small group, and large group practices [26]. Later research suggests that there may be as many as six types of practices [25], although these types were based on practices in the 1980s in Canada. These examples provide a precedent for grouping practices based on size, hospital work and community based multi-disciplinary practices. This paper investigates the assumption in many healthcare policies and much of the literature that primary healthcare providers work in a relatively homogeneous group of “practices” by building a taxonomy based on a configuration of characteristics.

The basic inductive-deductive process of science does not work without the phenomena under investigation being divided into sufficiently homogeneous classes [12]. A useful taxonomy of organisations would group organisations with similar characteristics in the same class [5]. Similarly, taxonomies are more likely to have some characteristics that a scientifically useful classificatory scheme should have [20], especially to accurately reflect the reality from which they are derived. A taxonomy based on configurations is an approach to organisational studies that favours synthesis, by developing or isolating composites that take the form of what have been called “gestalts”, “archetypes”, and “configurations” [16]. Configurational studies try to explain how order emerges from the interaction of parts of an organisation as a whole [14]. These

configurations can be defined as commonly occurring clusters of attributes and these characteristics come together in, and synthesise into, an internally consistent system [16].

The differences between configurations are caused by a stable and complex form of interdependency, or *coherence*, among variables [17]. The organisation "may be driven toward configuration to achieve consistency in its internal characteristics, synergy in its processes, and fit with its situation" [15, p. 21]. Since many of the variables are integrally related, so must be their changes [15]. This study therefore creates a taxonomy of practices to determine the viability of a multi-dimensional approach.

METHOD

This study used data from the 2008 wave of a large, longitudinal study of Australian doctors; the Medicine in Australia: Balancing Employment and Life (MABEL). The current study was based on the 3,973 (17.65%) General Practitioner (GP) respondents in the dataset [27].

Job satisfaction. Job satisfaction was measured using a 10 item scale from the Work and Life Attitudes Survey [24], on five point Likert ratings (*very dissatisfied* to *very satisfied*), with a good reliability (Cronbach's alpha = .86). *Aspects of Job Content.* The survey used a modified version of the job content questionnaire [24]. The scale asked respondents to indicate the extent they agreed or disagreed with statements relating to their job, on a five point Likert scale (from *strongly* agree to *strongly disagree*). Items included "the balance between my personal and professional commitments is about right" and "the hours I work are unpredictable. Items relating to stressors from patients included "my patients have unrealistic expectations about how I can help them" and "the majority of my patients have complex health and social problems". Additionally, the item "I have a poor support network of other doctors like me" related to availability support. *Intent to leave.* Respondents were asked "what is the likelihood that you will leave medical work entirely within FIVE YEARS?" and "what is the likelihood that you will leave direct patient care (primary or hospital) within FIVE YEARS?" on a five point Likert scale (from *very likely* to *very unlikely*). *General health.* Respondents were asked "in general, would you say your health is", on a five point Likert scale (from *excellent* to *poor*) and how many weeks of holiday were taken in the past year.

RESULTS

No extreme outliers or collinearity were found between variables used in the cluster analyses. Although some variables in the ANOVAs had unequal variances, parametric and non-parametric tests produced the same results, so only parametric analyses are reported. For the cluster analyses, z-scores were created from the following variables: "the IT systems I use are very helpful in day-to-day practice", "my patients have unrealistic expectations about how I can help them", "the majority of my patients have complex health and social problems", "the hours I work are unpredictable", number of GPs, number of nurses, number of allied health, number of administration, "is your current main practice co-located with other health or welfare", "approximately what percentage of patients do you bulk bill", and "do you do an after-hours or on-call yourself?" A variable was created to account for the number of GPs in a practice by adding the number of part time GPs multiplied by 0.6, to the number of full time GPs.

Table 1. Means, Percentages, Significances and Post-Hoc Outcomes for Cluster Groupings.

	Independent	**Co-located**	**Large Hospital**	**Isolated**	Sig/Posthoc (α = .001)
Practice Features: The hours I work are unpredictable†	.91	1.36	1.58	2.53	4 > 3 ,2 > 1
My patients have unrealistic expectations about how I can help them†	1.59	2.04	2.22	2.70	4 > 3, 2 > 1
The IT systems I use are very helpful in day-to-day practice†	2.89	2.51	2.96	2.61	3, 1 > 4, 2
The majority of my patients have complex health and social problems†	2.23	2.96	2.80	2.76	2, 3 > 4 > 1
Co-located†	38.0%	86.8%	55.9%	27.5%	$p < .001$
On call†	32.5%	55.6%	70.8%	70.4%	$p < .001$
Hospital†	19.0%	20.6%	37.1%	33.4%	$p < .001$
Percentage of patients bulk billed†	52.6%	71.6%	57.7%	68.4%	2, 4 > 3 > 1
Remoteness† *Major City*	71.7%	69.3%	62.0%	57.6%	$p < .001$
Inner regional	16.8%	15.2%	27.1%	22.5%	
Outer regional	12.1%	15.6%	10.9%	19.9%	
Full Time & Part Time GPs: Weighted (PT = .6) †	3.87	7.72	8.95	3.25	3 > 2 > 1 > 4
Number of allied health professionals†	0.83	6.07	1.20	0.79	2 > 3 > 1, 4
Number of administration†	3.21	7.36	7.86	2.93	3, 2 > 1, 4
Number of nurses†	1.42	3.99	3.95	1.35	2, 3 > 1, 4
Number of other staff	1.41	4.28	1.98	1.62	2 > 3 > 1; 2 > 4
Full Time GPs	2.08	5.17	6.31	2.01	3 > 2 > 1, 4
Part Time GPs	2.66	4.15	4.36	1.76	2, 3 > 1 > 4
Male GPs	46.7%	52.3%	58.5%	61.3%	$p < .001$
Job satisfaction sum	32.44	30.56	30.44	27.91	1 > 2, 3 > 4
Job Aspects: Work-life balance is about right	2.72	2.30	2.18	1.70	1 > 2; 3 > 4
Running my practice is stressful most of the time	1.65	2.06	2.09	2.67	4 > 2; 3 > 1
It is difficult to take time off when I want to	1.59	1.80	1.74	2.61	4 > 1, 2, 3
I have a poor support network of other doctors like me	1.62	1.50	1.52	2.08	4 > 1, 2, 3
My opportunities for continuing medical education and PD	1.57	1.52	1.61	1.39	1,2, 3 > 4
Outcomes: Total hours worked per week	34.51	37.53	40.81	45.41	4 > 1, 2, 3; 3 > 1
How long does an average consultation last?	17.27	19.69	15.88	17.04	2 > 1, 4 > 3
Would you like to change your hours of work	0.69	0.97	1.05	1.40	4 > 3, 2 > 1
Intent to leave medical work	1.04	0.96	0.91	1.41	4 > 1, 2, 3
Intent to leave direct patient care	1.27	1.22	1.22	1.75	4 > 1, 2, 3
Weeks holiday taken in the last year	4.90	4.56	4.79	4.25	1, 3 > 4

Self-rated general health	.93	1.14	1.01	1.36	4 > 2, 3, 1
Number of GPs in cluster	1,526	258	782	1,340	

Note. † denotes variables used in cluster analysis. For ‘self-rated general health’, 0 = excellent, 4 = poor. PD= professional development.

The analyses were conducted using SPSS in a two-stage approach (as recommended by [6], [19]) that increases the validity of solutions. First, hierarchical cluster analyses were conducted using Wards' method and squared Euclidean distances for each of the two-, three-, four-, five- and six-cluster outputs. The four-cluster solution was the most parsimonious. The means for the four-cluster solutions from Wards method were used as the starting means for the second stage of the analyses, a Quick Cluster procedure employing k-means non-hierarchical clustering. ANOVAs were used to aid the interpretation of the clusters (as recommended by [11]). To ensure that only key discriminating variables were noted, G*Power3 [4] was used to derive an alpha (.001) slightly stricter than that derived by the Bonferroni adjustment.

DISCUSSION

This study successfully determined a taxonomy of practices based on configurations of the characteristics of practices and extended prior research that had noted certain characteristics being important to GP satisfaction (e.g., per [10], [23]). These four configurations incorporate, but move beyond simplistic characterizations such as geography and beyond the standard three types (solo, small group and large group practices; [26]), with similarities to the system of Williams et al [25].

Independent GPs reported the best conditions, highest job satisfaction, more weeks holiday, but less pay than other groups. Independent GPs also reported having the best work-life balance, and scored the lowest for patients' unrealistic expectations, unpredictable hours, and stress from running a practice. Conversely, isolated GPs scored the worst for these conditions, and also reported greater difficulty taking time off, poorer support networks, and the least opportunity for development. Further, isolated GPs reported lower job satisfaction, more patients in private consulting, greater desire to change hours of work, leave medical work, and leave direct patient care, the least amount of holiday, working more hours, and the lowest self-reported health (although health for all forms of practices was still good). Large hospital practices had the shortest consultations, more weeks' holiday and more work hours, whereas co-located practices had the longest consultations and consultations with GPs in large hospitals were shortest.

The configurations found in this study demonstrate how order emerges for the whole from the interaction of the parts [14]. Further, the differences between the clusters highlight that the distinguishing characteristics are not about generalities such as whether the practice is rural or not (there were rural practices in each of the clusters, albeit of varying concentrations), but are multi-dimensional. For example, for a member of one cluster to move to another: (a) many variables must change together, and therefore firms will usually change in a multi-faceted way, (b) piecemeal change might destroy a configuration without having the scope to erect a new configuration, (c) configurations consist of many mutually supportive elements that fit together and act as a structure of resistance against change (per [15]). Subsequently, blunt policy interventions are unlikely to succeed, whereas any proposed changes to organizational forms will need to deal with substantial changes to move one type to another.

REFERENCES

[2] Access Economics. *Primary Health Care For All Australians*. Canberra, Australian Medical Association, 2002.

[3] Duckett, S.J. *The Australian Health Care System* (3rd edn). Oxford University Press, Melbourne, 2008.

[4] Faul F, Erdfelder E, Lang A-G, Buchner A. G*Power 3. *Behavior Research Methods*, 2007, *39* (2), 175-91.
[5] Haas, J.E., Hall, R.H. & Johnson, N.J. Toward an empirically derived taxonomy of organizations. In R.V. Bowers (Ed.), *Studies on behavior in organizations: A research symposium*. (pp. 157-180). Athens, Georgia: University of Georgia Press, 1966.
[6] Hair, J.F. Jr., Anderson, R.E., Tatham, R.L. & Black, W.C. *Multivariate Data Analysis with Readings*. Sydney: Prentice Hall, 1995.
[8] Hills, D., Joyce, C., & Humphreys, J. Validation of a job satisfaction scale in the Australian clinical medical workforce. *Evaluation & the Health Professions*, 2011, 1-30.
[10] Katerndahl, D., Parchman, M. & Wood, R. Perceived complexity of care, perceived autonomy, and career satisfaction among primary care physicians. 2009, *Journal of the American Board of Family Medicine*, *22*, 24-33.[11] Ketchen, D. & Shook, C.L. The application of cluster analysis in strategic management research. 1996, *Strategic Management Journal*, *17* (6), 441-458.
[12] McKelvey, B. Guidelines for the empirical classifications of organizations. 1975, *Administrative Science Quarterly*, *20*, 509-525.
[14] Meyer, A.D., Tsui, A.S. & Hinings, C.R. Configurational approaches to organizational analysis. *Academy of Management Journal*, 1993, *36* (6), 1175-95.
[15] Miller, D. & Friesen, P.H. *Organizations: A Quantum View*. Englewood Cliffs, NJ: Prentice Hall, 1984.
[16] Miller, D. & Mintzberg, H. The case for configuration. In Morgan, G. (ed). *Beyond Method*. Beverly Hills, CA; Sage, 1983, 57-73.
[17] Pettigrew, A.M. The character and significance of strategy process research. 1992, *Strategic Management Journal*, *13*, 5-16.
[19] Punj, G. & Stewart, D.W. Cluster analysis in marketing research. *Journal of Marketing Research*, 1983, *20*, 134-148.
[20] Sanchez, J.C. The long and thorny way to an organizational taxonomy. 1993, *Organization Studies*, *14* (1), 73-92.
[23] van Ham, I., Verhoeven, A.A.H., Groenier, K.H., Groothoff, J.W., & De Haan, J. Job satisfaction among general practitioners. *European Journal of General Practice*, 2005, *12*, 174-180.
[24] Warr, P., Cook, J., & Wall, T. Scales for the measurement of some work attitudes and aspects of psychological wellbeing. *Journal of Occupational Psychology*, 1979, *52* (2), 129-148.
[25] Williams, A.P., Vayda, E., Stevenson, H.M., Burke, M., & Pierre, L.D. A typology of medical practice organization in Canada. *Medical Care*, 1990, *28* (11), 995-1004.
[26] Wolinsky, F. Why physicians choose different types of practice settings. *Health Services Research*, 1982, *17*(4), 399-419.
[27] Yan, W. (ed.). *MABEL User Manual: Wave 2 Release.* Melbourne Institute of Applied Economic & Social Research, University of Melbourne: Melbourne, 2011.