

Can patient related variables predict the time occupational therapists spend with their patients prior to discharge from hospital?

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Increased health expenditure

Ageing population

Increased chronic
disease/disability

More hospital
admissions

Pressure on
healthcare
services

- Review of health service processes
- Workforce planning models
- Meet demands in existing budgets

Concept references: Australian Government Productivity Commission, 2011; Australian Health Workforce Advisory Committee, 2006; Australian Institute of Health and Welfare, 2014; World Health Organisation, 2015

Workforce planning models

- Research in nursing and medical literature
- Evidence supports improvements in:
 - Workforce planning
 - Efficiency
 - Patient care
- Could understanding predictive variables of time use be useful in occupational therapy?



Aim

- Can patient related variables predict the amount of time occupational therapists spend with patients in hospital?
- Does this differ based upon functional ability or hospital site?



Method

This study investigated the relationship between:

- Occupational therapist clinical time use
- Patient age
- Marital status
- Primary language
- Diagnosis
- Functional ability
 - SMAF score



Preliminary Analysis

- Descriptive statistics
- Analysis of variance
- Correlation
- Multiple regression
- Independent samples t-tests

Preliminary Results

- Data from 5319 inpatients were included
- All variables differed significantly between sites



Preliminary Results

Correlations between Occupational Therapist Clinical Time Use (minutes) and Patient Related Variables at $p < 0.01$ level

Location	Occupational Therapist	Age	Marital status	Primary language	SMAF score
Alfred	Total time use	0.082*	-0.013	0.037	-0.248*
Caulfield	Total time use	-0.186*	0.071	-0.057	-0.267*
Sandringham	Total time use	0.170*	0.050	0.058	-0.184*

Age and SMAF predicted the following variance in occupational therapist clinical time use:

- Alfred Hospital (acute): 6.5% ($r^2 = 0.065$; $p < 0.01$)
- Caulfield Hospital (subacute): 10.9 % ($r^2 = 0.109$; $p < 0.01$)
- Sandringham Hospital (acute): 5.9% ($r^2 = 0.059$; $p < 0.01$)

Preliminary Results

Mean Occupational Therapist Clinical Time Use per Day (minutes) for Patients Experiencing Mild and Moderate to Severe Loss of Autonomy

Location	SMAF score	Sample size	Mean	SD
Alfred (acute)		n= 2864	32.93	27.63
	SMAF score \geq -15	1667	34.88	28.92
	SMAF score \leq -15	1196	30.12	25.45
Caulfield (sub acute)		n= 1232	46.42	39.00
	SMAF score \geq -15	441	47.01	35.46
	SMAF score \leq -15	791	46.09	40.85
Sandringham (acute)		n= 492	39.68	31.86
	SMAF score \geq -15	355	44.43	34.28
	SMAF score \leq -15	137	27.37	19.88

Note: SMAF score \leq -15 is indicative of moderate to severe loss of autonomy

Clinical implications

- Patient related variables and occupational therapist clinical time use differ significantly between hospitals
- Age and SMAF score predict a small amount of occupational therapist clinical time use
- Insufficient to inform workforce planning models
- Results are comparable with previous literature



Future directions

Research directions:

Predictive workforce planning

- Only 5.9-10.9% of time predicted by current model
- Trial multi level modelling analysis with additional variables to potentially improve predictive power and inform workforce planning

Ratio based workforce planning

- Average occupational therapist time per day was site specific for 77% of patients
- Workforce could be based upon average occupational therapist time use per day per patient



Future directions

- Occupational therapy time use is:
 - Complex and difficult to understand
 - Person specific
 - Impacted by a range of factors
- This inherent variability will make development of workforce planning models challenging
- Further research required to develop workforce planning models



24 May 2018

Thank-you Questions?

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