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Improving medication adherence in culturally diverse populations: results of a RCT

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What we know

- Chronic conditions managed with long-term medicines
- Health outcomes depend on the choices people make daily
  - decisions based on beliefs about treatment & illnesses
  - health literacy
- ~50% non-adherent- risk ↑ as number of prescribed medicines ↑ (Haynes et al., 2008)
- Few interventions to help people take their medicines
- Single disease model - specialised health care system

The context

- Co-existing diabetes, kidney disease & cardiovascular disease ↑ in prevalence
  - aging population
  - causal relationships between these diseases
  - ↑ mortality & burden on health care
  - ↓ quality of life
  - Australia's multicultural society

Method

- RCT to improve adherence to prescribed medications
- 1:1 random allocation to intervention or usual care
- People collecting data & assessing outcomes blinded to group assignment
- Multifactorial intervention delivered over 3 months
  - home visit & follow-up motivational interviewing calls
- Interactive, psychosocial approach to enhance medicine adherence, appealing to knowledge, thoughts & feelings

Home visit: medicine review

- Chart of participant's prescribed medicines

– what the medicine is for
– the dose & when to take
– related to targets (Harris, 2008)

- Interpreters for non-English speaking participants
- Prescription reconciliation
- Medicine chart given to participants to take to consults, & to note changes in their prescriptions as they occurred

Home visit: DVD

- Content drawn from literature, & perceptions of people with these co-existing diseases & their health professionals
- Underpinned by modified Health Belief Model (Becker, 1976)
- Comprised of
  - how co-existing diseases affect health
  - the need, benefit & safety of prescribed medicines
  - tips to help people take their medicines as prescribed
- Non-english speaking participants
  - interpreter translated DVD & hard copy booklet

Follow-up motivational interviewing

- Fortnightly about B/P, wellbeing & medicines
  - any changes, difficulties, health concerns
  - uncertainties about taking medicines explored using positive self-motivational statements to encourage self-efficacy
  - 3 life goals to expose ambivalence
  - suggestions invited & strategies that have worked for others
  - key points summarised, desired behaviour affirmed
  - participant to try at least one strategy to enhance positive behavioural change (Miller & Rollnick, 2002)

Inclusion criteria

- Patients of either gender aged ≥ 18 years of age
- Mentally competent (AMT > 6, Hodkinson, 1972)
- Type 1 or Type 2 diabetes
- Chronic kidney disease defined by eGFR >15 - ≤ 60 mL/min/1.73 m^2
- Systolic hypertension ≥130 mmHg prescribed antihypertensives
- Patients recruited from nephrology & diabetes outpatients' clinics of 2 Australian metropolitan hospitals in 2008 – 2009
- English speaking & Greek, Italian or Vietnamese
  - the most common non-English speaking languages at these clinics

Data collection

- English proficiency test (ABS, 1999) - 4 options
  - 'Not at All' to 'Very Well'
- Morisky Medication Adherence Scale (1986) - 4 questions
  - Do you ever forget to take your prescribed medicines?
  - Do you ever have problems remembering to take your prescribed medications?
  - When you feel better, do you sometimes stop taking your prescribed medicines?
  - Sometimes if you feel worse when you take your medicine, do you stop taking it?
- Health Care Utilization Scale (HCUS) (Lorig et al. 1996)- 4 questions
  - health care use over past 3 months ie doctor, ED & hospital
- Baseline, 3, 6 & 12 months follow-up- Morisky & HCUS

Demographics

	Control, N=60		Intervention, N=68		P.val
	N	%	N	%	
Gender					0.635
Male	36	60.0	39	57.4	
Age	68.7 (10.7)		70.2(9.0)		0.397
Employment					0.388
Retired	42	70.0	51	75.0	
Full time	8	13.3	2	2.9	
Part time	2	3.3	4	5.9	
Disability	5	8.3	5	7.4	
Homemaker	1	1.7	3	4.4	
Other	2	2.4	3	4.4	
Home					0.348
Own/paid off	43	71.7	48	70.6	
Mortgage	5	8.3	8	11.8	
Pay rent	11	18.3	9	13.2	
Live with mother	0	0.0	1	1.5	
Other	1	1.7	2	2.9	
Smoking					0.999
Current or Ex	22	36.7	24	35.3	
Never	38	63.3	44	64.7	
Diet					0.870
Not at all	4	6.7	7	10.3	
Not well	11	18.3	14	20.6	
Well	32	53.3	31	45.6	
Very well	10	16.7	11	16.2	
Missing	3	5.0	5	7.4	
Exercise					0.561
FALSE	25	41.7	32	47.1	
TRUE	33	55.0	33	48.5	
Missing	2	3.3	3	4.4	
Speak English					0.104
Not at all	5	8.3%	13	19.1%	
Not well	9	15.0%	11	16.2%	
Well	6	10.0%	12	17.6%	
Very well	40	66.7%	32	47.1%	

English proficiency

- 128 participants
  - 45 (25 control [41.7%], 20 intervention [29.4%]) reported English as their **only** Primary language
  - 90 (70.3%) spoke English Well or Very Well
    - 30 (23.4%) born in Australia or UK
    - 38 (29.7%) born in Italy
    - 17 (13.3%) born in Greece

Morisky Adherence Scale

	Control, N=60		Intervention, N=68		P.val
	N	%	N	%	
Forget	18	31.0%	24	36.9%	0.492
Problem to remember	18	31.0%	22	33.9%	0.74
Feel better	0	0.0%	5	7.7%	0.059
Feel worse	4	6.9%	6	9.2%	0.636

Morisky Adherence Scale

- All of the control group reported ‘No’ for Morisky Q- When you feel better, do you sometimes stop taking your prescribed medicines?
- However 5 (7.7%) in the intervention group reported ‘Yes’ (p=0.059 – approaching statistical significance)
- 35 (41.2%) of participants speaking English ‘Well’ or ‘Very Well’ reported they forgot to take medicines compared to 7 (18.4%) who spoke English ‘Not At All’ or ‘Not Well’

Influence of country of origin

- Participants born in Australia or UK more likely to report having a problem remembering to take their medications (57.1% vs 25.3%, p=0.002)
- Participants born in Australia or UK had lower number of reported visits to their GP (median 2 (IQR: 1-3) vs 3(IQR: 2-4), p=0.019)
  - no statistical significance when adjusted for age, gender, level of education or English proficiency

Health care utilisation

There was no difference between groups in term of health care use

- median number of GP visits was 3 - similar in both groups
  - (IQR 1-4) in the control group
  - (IQR 2-4) in the intervention group
- the results for the ED visits and hospitalisation were 0 in both groups

Qualitative results

- Medicine review- communication gaps
- Difficulties conducting research in CALD groups
  - medical information provided in English
    - about medicines & what for
    - on medicine boxes
    - medicine lists
    - participants could not document any changes to medicines/prescriptions in English
  - researchers unable to verify information
  - motivational interviewing
    - interpreters introduced 3rd person in the relationship

Conclusion

- Why English speaking patients are more likely to report forgetting to take their medications & see their doctor less often requires investigation
- Interventions needed to help people from culturally diverse backgrounds to take their medicines –
  - increased use of interpreters in consultations
  - use of bilingual health professionals
  - routine review of all medicines with patients
  - facilitate active engagement & motivation in managing health

Future Research

- Interventions adapted to culture & responsive to immigration patterns
- Use of bilingual researchers
- Measuring medicine adherence other than self-report
  - computerised medication containers that record opening ie Medication Events Monitoring System®
  - prescription refills
  - surrogate measures of adherence

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Thank you