

Prospective Case Cohort Study
on the provision of
alternating pressure air-filled mattress
in relation to sore development
in bed chair ridden
private old aged home residents
in NTEC CGAT TEAM

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Introduction

- Alternating pressure air-filled mattress is commonly prescribed for sore prevention and management
- 2004 Cochrane Database of Systematic Reviews, cannot determine the most effective surface for either prevention or treatment of sore
- Effectiveness of alternating pressure mattress was concluded as unclear

Aims of the Study

- To study the incidence of sore development among bed chair ridden elderly in private old aged home
- To study the potentially causal relationship between the provision of alternating pressure mattress and the development of sore

Methodology

- Prospective case cohort study
- Bed chair ridden private OAH residents in NTEC under CGAT at risk of sore development
- Interview at beginning
 - On site visit Jan 2008-June 2008
 - Inclusion criteria:
 - Aged ≥ 65 year old
 - Bed chair ridden
 - Norton Scale ≤ 14
 - Dependent in bed mobility
 - Free from sore at the beginning of study

Methodology

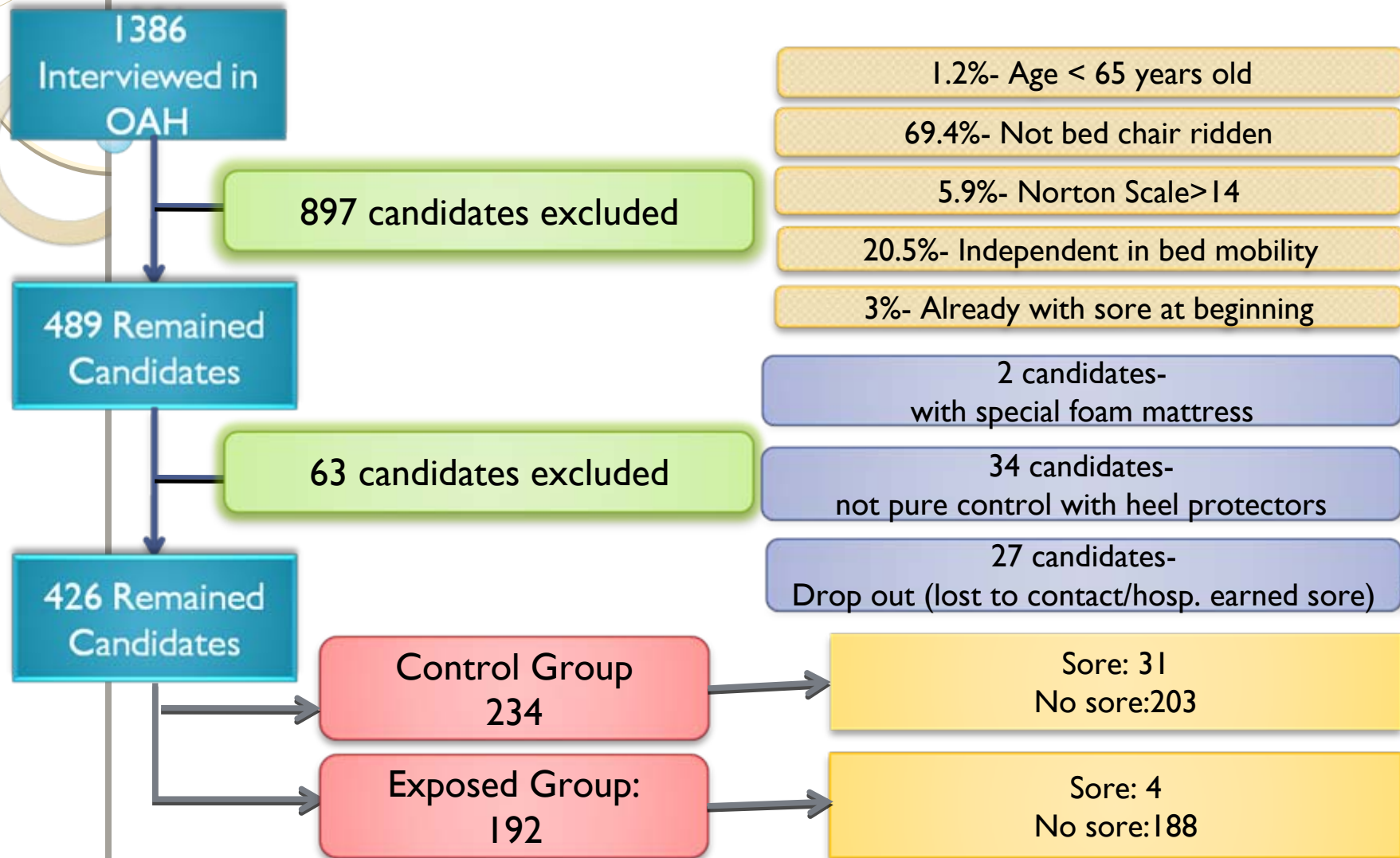
- Convenient sampling method
- NTEC: Shatin, Tai Po, North District
- A total of 23 OAH
- Demographic data: skin condition, presence or absence of alternating pressure air-filled mattress
- Follow up at 6 month July 2008-Dec 2008
 - Regular on site visits biweekly
 - Record the incidence, location, severity of sores reported
 - Date of sore developed
 - Number of sore free days
 - Subjects regarded as developed sore if found to have grade 2 sore and above (EPUAP)

Exposed and Non exposed Groups

- Non exposed group (control)
 - only with ordinary 2" foam
- Exposed group
 - ordinary 2" foam and alternating pressure A-B type air-filled mattress with or without heel protectors



Results



Results : Demographic data

	Control n=234	Exposed Gp n=192	t/X ²	P value
Female	166(70.9%)	138 (71.9%)	X ² =-0.21	>0.05
Male	68(29.1%)	54 (28.1%)	X ² =-0.21	>0.05
Age mean (SD)	85.6 (SD=7.4)	85.4 (SD=7.8)	t=-0.18	>0.05
Drop out rate	16	11	X ² =0.18	>0.05
Reported death rate	32	26	X ² =0.002	>0.05

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Results : Incidence of sore

	Sore	No Sore	
Exposed to alternating pressure mattress	A=4	B=188	A+B=192
Non exposed to alternating pressure mattress	C=31	D=203	C+D=234

Results

Incidence of sore	Control n=234	Exposed n=192	ARR	RR	RRR	NNT
Any type of sore	31/234=0.13	4/192=0.02	-0.11	RR=0.15 95% CI(0.06-0.44)	0.85	9
Sacral sore	22/234=0.09	4/192=0.02	-0.07	RR=0.22 95% CI(0.08-0.693)	0.78	14
Heel sore	16/234=0.07	1/192=0.02	-0.05	RR=0.28 95%CI(0.01-0.57)	0.72	20

Results

	Control Group n=234	Exposed Group n=192	t value	p value
No. of sore free days Mean (SD)	165.3 (SD=45.9)	179.8 (SD=17.4)	t=-4.48	p=0.000
No. of hospital admission for sore management Mean(SD)	0.05(0.28)	0.00(0.00)	t=2.55	p=0.011
LOS in hospital for sore management Mean(SD)	0.55(3.34)	0.00(0.00)	t=2.53	p=0.000
Total expenses without subsidies HK\$ Mean (SD)	1375.4 (SD=990.5)	2223.2 (SD=9675.0)	t=1.33	p>0.05

Conclusions

- Alternating pressure air-filled mattress is **effective in reducing 85% risk of sore** development for bed chair ridden private OAH residents
- The **purchase costs** of alternating pressure mattress was **payoff** by
 - costs of treating the developed pressure sores
 - **shorter hospital length of stay**
 - **less hospital admissions**
 - **more sore free days** of subjects.



Thank You

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