



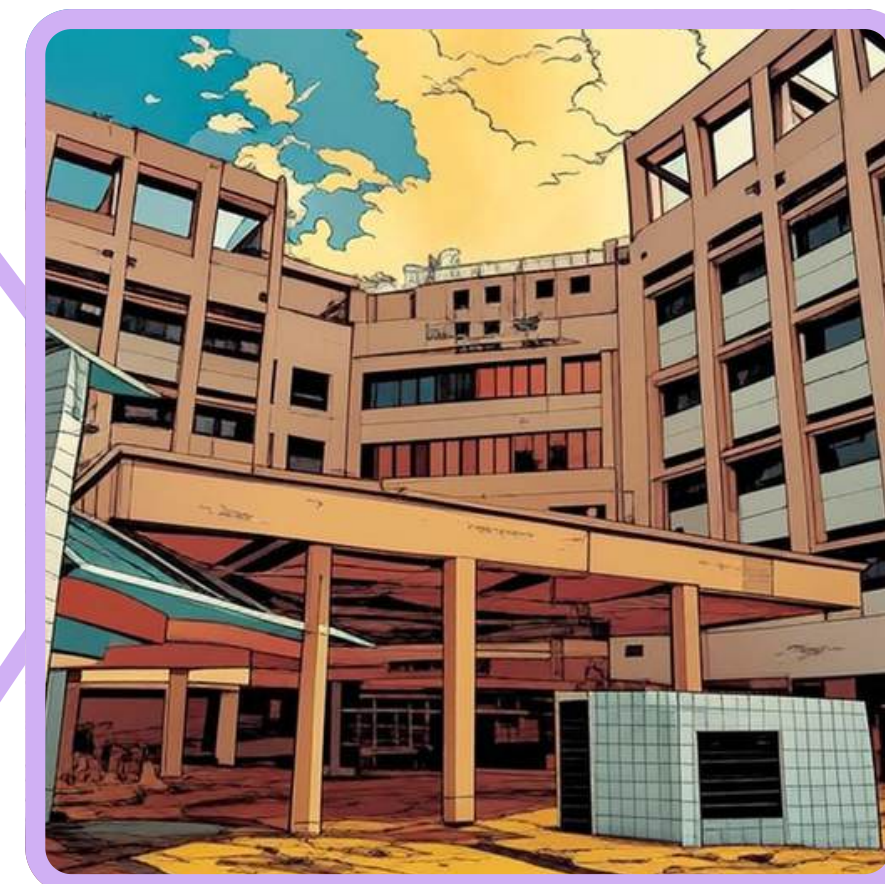
Hospital Authority Convention 11 - 13 May 2026



Individualised Music Intervention for Patients: Enhancing Well-Being in Dementia Care

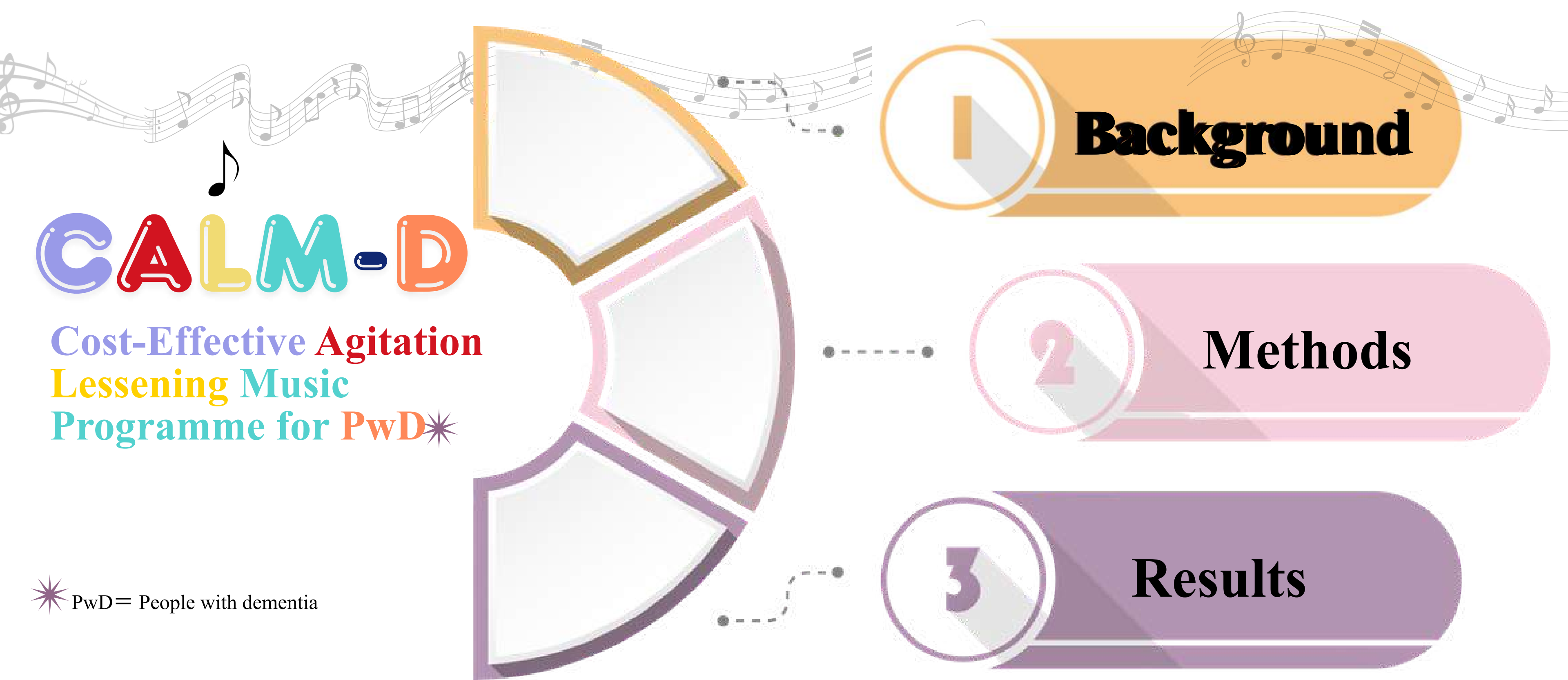
Hui WC(1), Chan CW(1), Lai KS(1), Yeung KK(1), Li HS(1), Tsang WY(1), Yip WM(1)

(1)Department of Medicine and Geriatrics, Tai Po Hospital



醫院管理局
新界東醫院聯網
Hospital Authority
New Territories East Cluster





CALM-D

Cost-Effective Agitation
Lessening Music
Programme for PwD*

* PwD = People with dementia



Background



Methods



Results

Background

Why Focus on Agitation in Dementia?

50-80% PwD experience **agitation**





Impair well-being

- **Change in mental status**
- **Dehydration**
- **Fall**



↑ Caregiver burden

- **↑ Frustration**
- **↑ Stress**



↑ Healthcare cost

- **↑ Length of stay**
- **↑ Pharmacological agent use**
- **↑ Emergency visits**
- **↑ Specialised care**

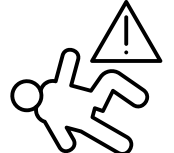
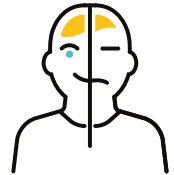
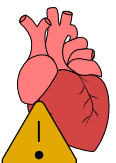



(Belenchia, 2023; Choudry et al., 2025; Hu & Xu, 2026; Jones et al., 2021; Misha et al., 2025; Teigland et al., 2024)

Background

Service Gap

Pharmacological Agents

↑ Risk of

- Falls 
- Stroke 
- Cardiovascular events 
- Cognitive worsening 
- Tardive dyskinesia 
- Extrapramidal side effects
- Mortality 

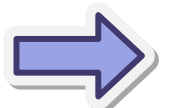
Non-Pharmacological Approaches

- Safer & increasingly recommended
- ↑ Effectiveness
- ↑ Quality of life

(Belenchia, 2023; Choudry et al., 2025; Hu & Xu, 2026)

 **Background**

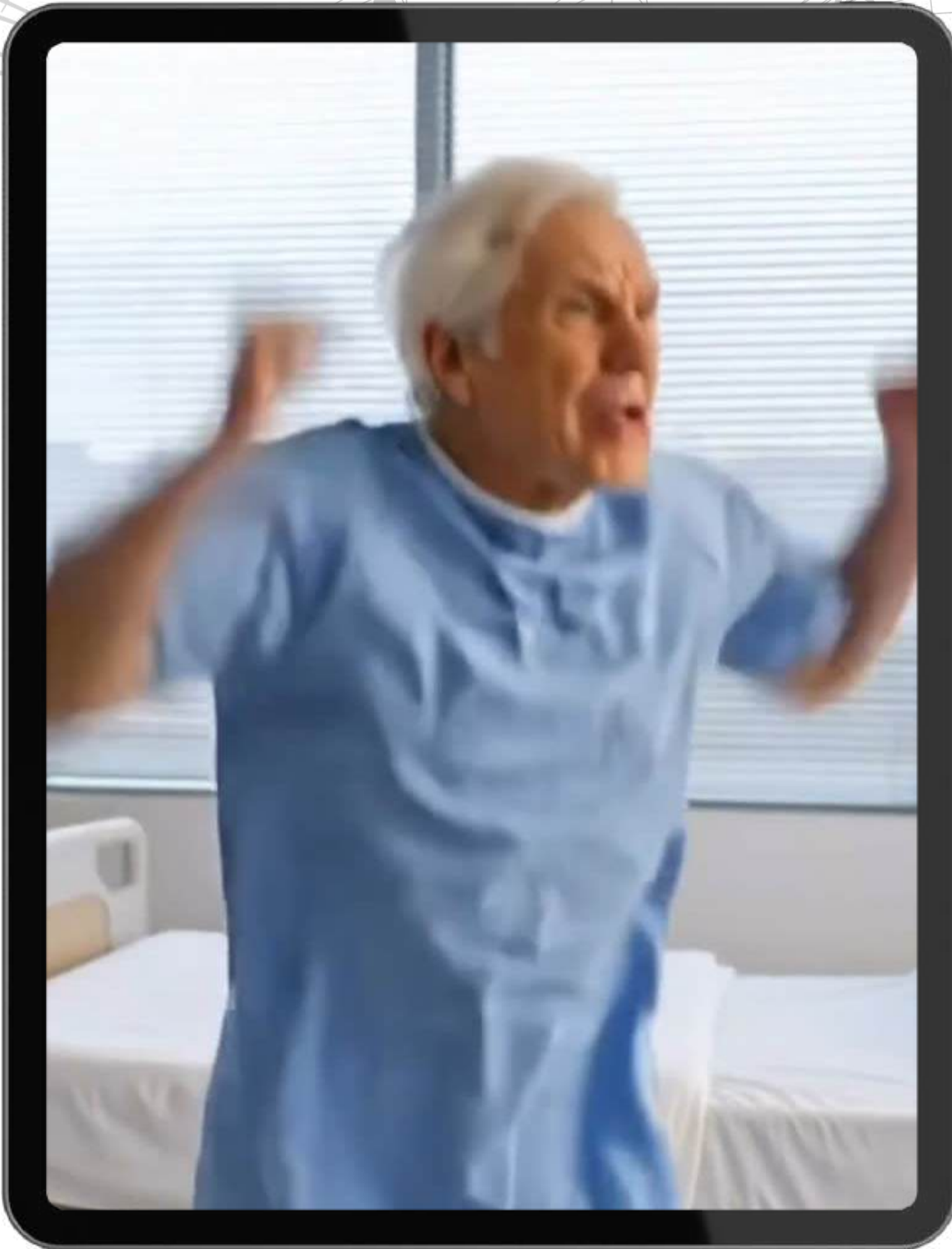
Why Music Intervention?



Caution: High Volume Ahead

Background

Why Music Intervention? 🎵



- 1 Cost-effective
- 2 Safe
- 3 Music Memory Remains Intact Despite Dementia
- 4 Cognitive Stimulation and Memory Recall
- 5 Enhances Social Interaction
- 6 Evokes Positive Emotions
- 7 Easy to Implement
- 8 Promote Restraint-free Care
- 9 Personalised Playlist

(Belenchia, 2023; Choudry et al., 2025; Dahms et al., 2021; Lee, 2023; Murphy et al., 2018)

Background

Nursing-Led Roles in Managing Agitation in Dementia

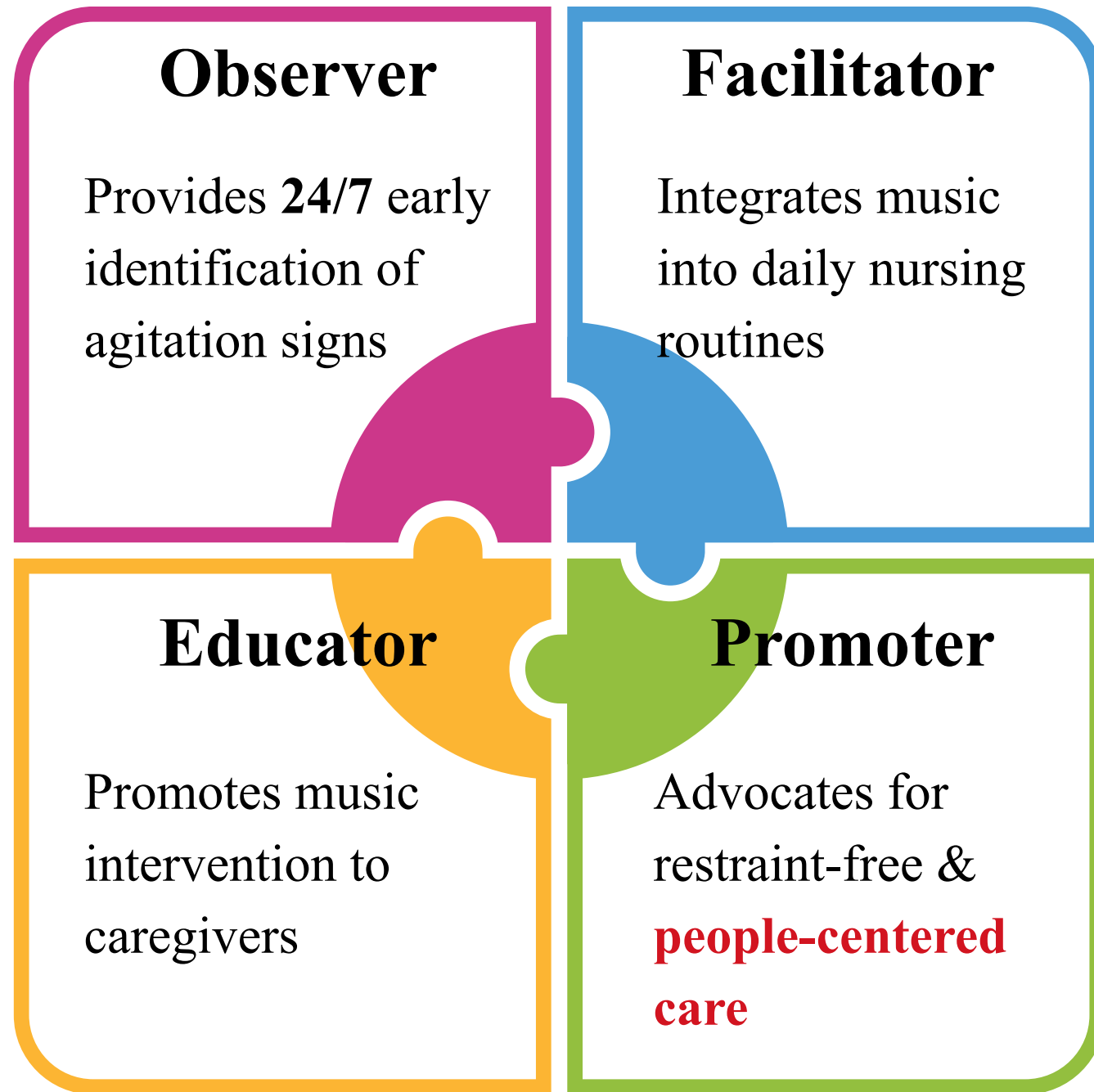
Vision 願景

- Healthy People 市民健康
- Happy Staff 員工開心
- Trusted by the Community 大眾信賴

Values 核心價值

- 以人為先
- Professional Service 專業為本
- Committed Staff 敬業樂業
- Teamwork 群策群力

People-Centred Care 以人為先



(Belenchia, 2023; Choudry et al., 2025; Hospital Authority, 2025; Hu & Xu, 2026)

Background

Screening Tool : Pittsburgh Agitation Scale (PAS)

PITTSBURGH AGITATION SCALE

Patient's Name: _____ Rater's Name: _____
 Patient ID: _____ Date: _____ Time: _____ AM/PM to _____ AM/PM
 Hours of sleep this rating period: _____

Circle only the highest intensity score for each behavior group that you observed during this rating period. Use the anchor points as a guide to choose a suitable level of severity. (Not all anchor points need be present. Choose the more severe level when in doubt.)

Behavior groups	Intensity during rating period
Aberrant Vocalization (repetitive requests or complaints, nonverbal vocalizations, e.g., moaning, screaming)	0. Not present 1. Low volume, not disruptive in milieu, including crying 2. Louder than conversational, mildly disruptive, redirectable 3. Loud, disruptive, difficult to redirect 4. Extremely loud screaming or yelling, highly disruptive, unable to redirect
Motor Agitation (pacing, wandering, moving in chair, picking at objects, disrobing, banging on chair, taking others' possessions. Rate "intrusiveness" by normal social standards, not by effect on other patients in milieu. If "intrusive" or "disruptive" due to noise, rate under "Vocalization.")	0. Not present 1. Pacing or moving about in chair at normal rate (appears to be seeking comfort, looking for spouse, purposeless movements) 2. Increased rate of movements, mildly intrusive, easily redirectable 3. Rapid movements, moderately intrusive or disruptive, difficult to redirect 4. Intense movements extremely intrusive or disruptive, not redirectable verbally
Aggressiveness (score '0' if aggressive only when resisting care)	0. Not present 1. Verbal threats 2. Threatening gestures; no attempt to strike 3. Physical toward property 4. Physical toward self or others
Resisting Care (circle associated activity) Washing / Dressing / Eating / Meds Other: _____	0. Not present 1. Procrastination or avoidance 2. Verbal gesture of refusal 3. Pushing away to avoid task 4. Striking out at caregiver

Were any of the following used during this rating period because of behavior problems?
 (Circle interventions used.)

- Seclusion
- PRN Meds (specify)
- Restraint
- Other interventions

Reference: Rosen, J., Burgio, L., Killar, M., Cain, M., Allison, M., et al. (1994). The Pittsburgh Agitation Scale. *American Journal of Geriatric Psychiatry*, 2, 52-59.

(Baker & MacLellan, 2012; Belenchia, 2023)



Reliable and **valid** tool
 (Cronbach's alpha = 0.93)



Easy to assess based on direct observation in a period **flexible** from 1 to 8 hours



Feasible in ward setting



CALM-D

Cost-Effective Agitation
Lessening Music
Programme for PwD



Background



Methods



Results

**New Territories East Cluster
Tai Po Hospital**

"Individualised Music Intervention for Patients: Enhancing Well-Being in Dementia Care"

Hui WC(1), Chan CW(1), Lai KS(1), Yeung KK(1), Li HSI(1), Tsang WY(1)
(1)Department of Medicine and Geriatrics, Tai Po Hospital

Introduction

Agitation affects 50-80% of people with dementia (PwD), impairing their well-being, burdening caregivers and straining healthcare resources. While pharmacological agents carry risks of adverse effects, non-pharmacological approaches show promise to settle agitation. Individualised music listening approach is a cost-effective and safe intervention to reduce agitation by leveraging preserved musical memory—even in advanced stages. The personally familiar music also evokes positive memories and emotions, enhancing therapeutic efficacy, promoting interaction and environmental engagement, supporting restraint-free care and decreasing reliance on pharmacological agents. Technology based music intervention via iPads or Tami robots improves accessibility and sustainability at low cost. It enables "twenty-four hours, seven days" on-demand access to personalised playlists, thereby effectively alleviating agitation.

Objectives

1. Alleviate agitation of PwD on the Pittsburgh Agitation Scale (PAS) after 7 days
2. Promote a restraint-free environment
3. Minimise the use of pharmacological agents

Methods

38 participants recruited

Inclusion criteria:

- Age ≥65 years
- Diagnosed with dementia
- Baseline PAS score >0

Exclusion criteria:

- Severe psychiatric conditions

Intervention

From July 2025 to December 2025

- Daily 30-minute individualised music sessions for 7 consecutive days
- Tailored-made playlists according to musical preferences

Assess

- PAS score reduction
- Percentage ↓ in physical restraints use
- Percentage ↓ in pharmacological agents use

Results

- Demographics: mean age 80.8 years, range 69-91, 71.1% male
- Mean PAS score ↓ significantly from 5.52 → 2.24 (p<.001)
- 89.5% showed ≥ 50% reduction in agitation
- Physical restraint was discontinued in 62.9%
- Chemical agents were reduced by 47.4%, including benzodiazepines in 22.2%, antidepressants in 44.4% and sedative-hypnotics in 44.4% of applicable PwD

Conclusion

- Individualised music intervention, delivered simply and economically, yielded marked reductions in agitation as well as the use of physical restraint and pharmacological agents.
- It is a cost-effective, accessible and sustainable non-pharmacological approach for managing agitation in PwD.
- High-quality evidence focusing on reductions in pharmacological agent use remains limited in Asia.
- Future larger-scale research with larger sample size and more in-depth qualitative exploration of caregiver perceptions and staff feedback is required for ongoing quality improvement and service enhancement.

1 Plan

- ✓ Identify issue: High agitation → ↑ Caregiver burden, healthcare cost, restraints, pharmacological agents
- ✓ Strategy: Implement individualised music listening programme to reduce agitation in PwD & develop resources

2 Do

- ✓ Individualised music listening programme
 - Identify agitated PwD via Pittsburgh Agitation Scale
 - Develop personalised playlist
 - Deliver 30-min daily personalised sessions
 - Promote music listening to caregivers via pamphlet

3 Check

- ✓ Measure
 - Pittsburgh Agitation Scale change
 - % reduction in restraint
 - % reduction in pharmacological agents
 - Staff/caregiver experiences of calmer wards

4 Act

- ✓ Larger scale: From 4 medical trial wards to all wards in Medicine & Geriatrics
- ✓ Train more staff
- ✓ Refine: Address barriers (e.g. connection procedure) & feedback
- ✓ Plan next cycle: Larger trial, qualitative deep dive



2

Methods

Objectives



CALM-D

Cost-Effective
Agitation
Lessening
Music
Programme for
PwD



Pharmacological Agents

Minimise the use of
**pharmacological
agents**

Restraint

Promote a **restraint-
free** environment

PAS

Alleviate **agitation** of
PwD on the Pittsburgh
Agitation Scale (PAS)
after 7 days

2

Methods



Target Participants

Inclusion Criteria

- Age \geq 65 years
- Diagnosed with dementia
- Baseline PAS score $>$ 0

Exclusion Criteria

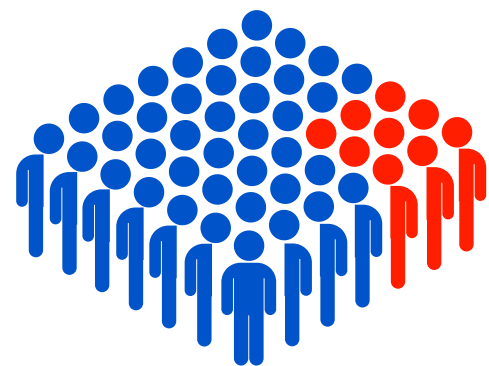
- Severe psychiatric conditions

Study Design

- Quasi-experimental pre-post design
- Convenience Sampling

Sample Size

- 38 participants recruited



2

Methods

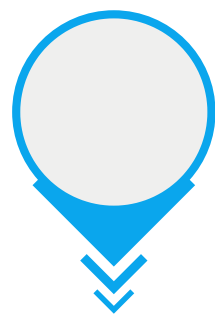
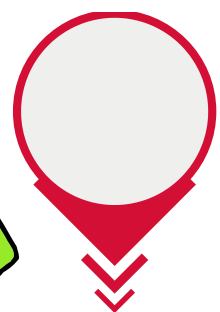
Time Frame

June 2025

July 2025

December 2025

January 2026



1. Prepration

- Approval
- Workflow
- Staff Training PowerPoint
- Educational Pamphlet
- Documentation Form

2. Implementation

One week daily 30-minute music session

3. Collect Data

4. Evaluation

Staff Training PowerPoint

Assessment + case selection + preparation

- Day 0
- Diagnosed dementia
- PAS (score >0)
- verbal consent
- generate patient's individualized music playlist

Implementation

- Day 1 - 7
- play music at 16:00 - 16:30
- observe patient

Evaluation

- Day 7 (or on discharge day if LOS <8 days)
- post PAS
- staff feedback survey

Workflow Protocol for Staff

音樂治療

音樂記憶儲存於輔助運動皮層中，有助於減緩認知衰退

播放熟悉的音樂有助……

- 1 刺激或喚起已遺忘之記憶
促進記憶召回與活動能力
- 2 誘發正面記憶
有助舒緩長者激動情緒和行為
- 3 一種溝通的媒介，讓難以用言語表達的人士以非言語的方式表達自己
- 4 增強社交互動，減輕因孤獨或挫折感引起的激動情緒

外國已有多項研究證實能夠促進關係、互動、自我意識、學習、自我表達、溝通和個人發展

每日半粒鐘
**聽歌醒腦好輕鬆
抗呆護腦唔會慳**

對象：認知障礙院友
時間：每日下午4時
流程：先收集院友所喜愛之歌曲，並於住院期間向其播放30分鐘音樂為期約一星期
地點：大埔醫院病房

**音樂療心
認知護航**

選擇喜愛音樂

Educational Pamphlet for Relatives

大埔醫院 內科及老人科部門 音樂聆聽記錄表		黏貼標籤	
第一部分：病人資料 (由家屬/照顧者協助填寫)			
病人姓名:		出生地:	
慣用稱呼:		喜愛歌手/ 歌曲:	
自然音樂:			
常見行為問題原因:	如身體不適/尿片濕/飢餓/陌生環境/ 其他:		
發生時間:			
第二部分：入院資料 (由病房護士填寫)			
入院日期:		入院原因:	
Pre PAS <small>"Wilmington Agitation Scale"</small>		日期:	
Post PAS		日期:	
HK-MoCA 5:		日期:	
or Diagnosed Dementia/MCI			
(請於P更完結時，完成Pre PAS/Post PAS)			
<input type="checkbox"/> 已向病人/家屬介紹音樂治療計劃並取得同意 <input type="checkbox"/> 已向病人/家屬派發音樂治療計劃單張			
播放設備: <input type="checkbox"/> 病房iPad <input type="checkbox"/> Temi機械人 <input type="checkbox"/> 照顧者手機			
第三部分：音樂治療每日記錄 (由病房護士填寫)			
請每日於16:00進行30分鐘音樂治療 (可按病人及病房活動調整)，完成後請於當日對應方格勾選。			
第0天 日期: <input type="text"/> 約束: <input type="checkbox"/> 全日 <input type="checkbox"/> 夜間 <input type="checkbox"/> 其他: <input type="text"/> <input type="checkbox"/> 無 鎮定藥: <input type="checkbox"/> Regular <input type="checkbox"/> PRN <input type="checkbox"/> 無		第1天 日期: <input type="text"/> <input type="checkbox"/> 已完成 約束: <input type="checkbox"/> 全日 <input type="checkbox"/> 夜間 <input type="checkbox"/> 其他: <input type="text"/> <input type="checkbox"/> 無 鎮定藥: <input type="checkbox"/> Regular <input type="checkbox"/> PRN <input type="checkbox"/> 無	
第2天 日期: <input type="text"/> <input type="checkbox"/> 已完成 約束: <input type="checkbox"/> 全日 <input type="checkbox"/> 夜間 <input type="checkbox"/> 其他: <input type="text"/> <input type="checkbox"/> 無 鎮定藥: <input type="checkbox"/> Regular <input type="checkbox"/> PRN <input type="checkbox"/> 無		第3天 日期: <input type="text"/> <input type="checkbox"/> 已完成 約束: <input type="checkbox"/> 全日 <input type="checkbox"/> 夜間 <input type="checkbox"/> 其他: <input type="text"/> <input type="checkbox"/> 無 鎮定藥: <input type="checkbox"/> Regular <input type="checkbox"/> PRN <input type="checkbox"/> 無	
第4天 日期: <input type="text"/> <input type="checkbox"/> 已完成 約束: <input type="checkbox"/> 全日 <input type="checkbox"/> 夜間 <input type="checkbox"/> 其他: <input type="text"/> <input type="checkbox"/> 無 鎮定藥: <input type="checkbox"/> Regular <input type="checkbox"/> PRN <input type="checkbox"/> 無		第5天 日期: <input type="text"/> <input type="checkbox"/> 已完成 約束: <input type="checkbox"/> 全日 <input type="checkbox"/> 夜間 <input type="checkbox"/> 其他: <input type="text"/> <input type="checkbox"/> 無 鎮定藥: <input type="checkbox"/> Regular <input type="checkbox"/> PRN <input type="checkbox"/> 無	
第6天 日期: <input type="text"/> <input type="checkbox"/> 已完成 約束: <input type="checkbox"/> 全日 <input type="checkbox"/> 夜間 <input type="checkbox"/> 其他: <input type="text"/> <input type="checkbox"/> 無 鎮定藥: <input type="checkbox"/> Regular <input type="checkbox"/> PRN <input type="checkbox"/> 無		第7天 日期: <input type="text"/> <input type="checkbox"/> 已完成 約束: <input type="checkbox"/> 全日 <input type="checkbox"/> 夜間 <input type="checkbox"/> 其他: <input type="text"/> <input type="checkbox"/> 無 鎮定藥: <input type="checkbox"/> Regular <input type="checkbox"/> PRN <input type="checkbox"/> 無	
<input type="checkbox"/> 已完成音樂治療計劃及教育照顧者。 <input type="checkbox"/> 提前終止，原因: <input type="text"/>			

Documentation Form

2

Methods

Implementation

Session Duration

30 minutes per session for 7 consecutive days

Music Content

Communicative patients: Individualised playlists
Non-communicative patients: Natural music

Delivery Method

iPad / Temi robot

Implementation Time

4:00 PM daily or adjusted by patient's preferences

Timeline

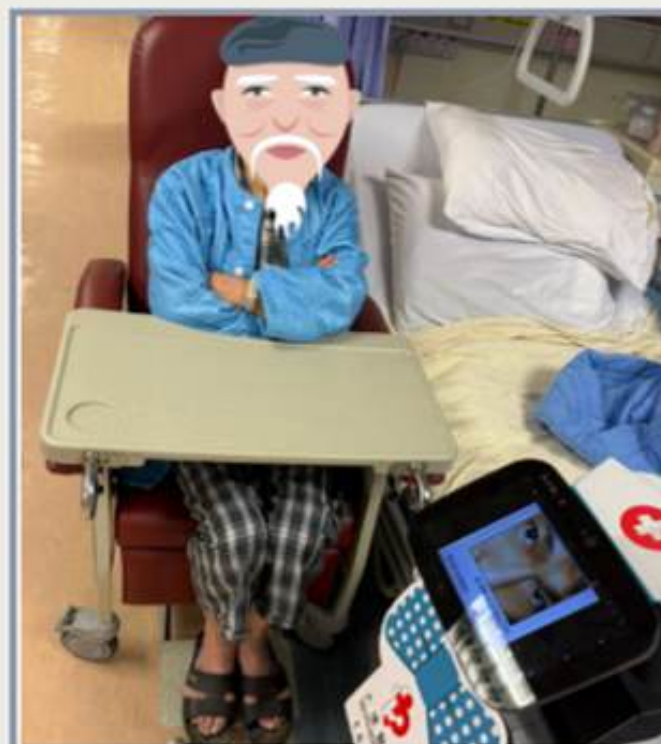
From July 2025 to December 2025

(Belenchia, 2023; Lee et al., 2023)

2

Methods

Activity Photo



Verbal Consent

Educational Pamphlet

Pre-PAS

Develop Individualised Playlist

Daily 30-mins Music Sessions

Observe Patient

2

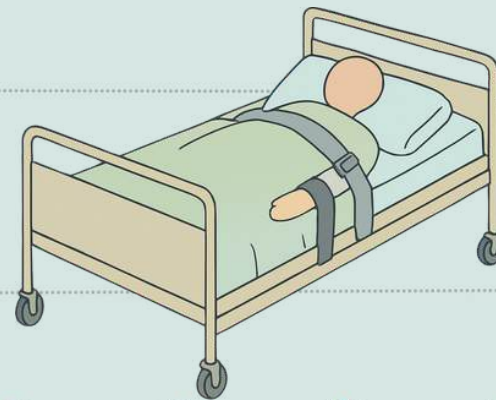
Methods

Outcome Measures

1 PAS score
reduction



2 Percentage
↓ in physical
restraints use



3 Percentage
↓ in
pharmacological
agents use



(Belenchia, 2023; Lee et al. 2023)



CALM-D

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Lessening Music
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Background



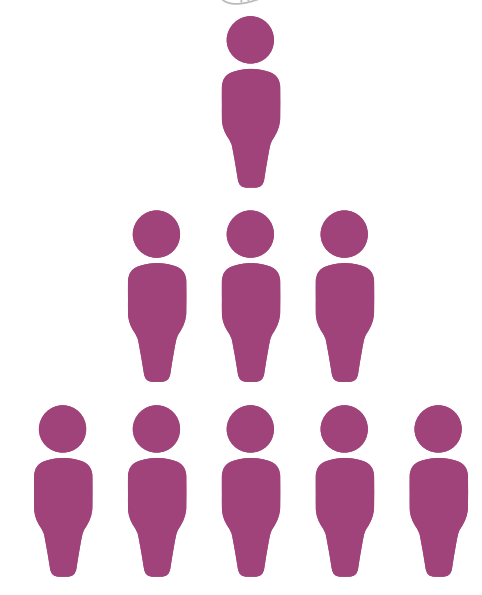
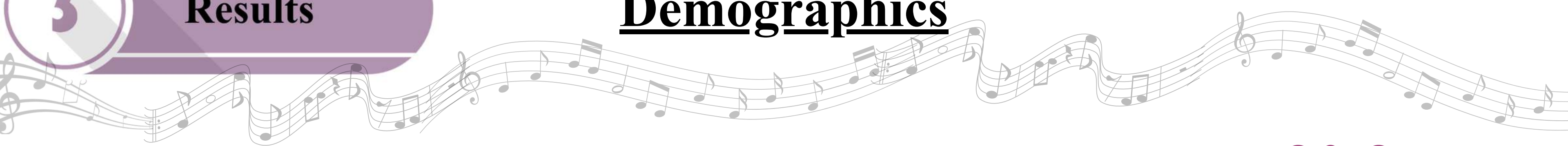
Methods



Results

3 Results

Demographics

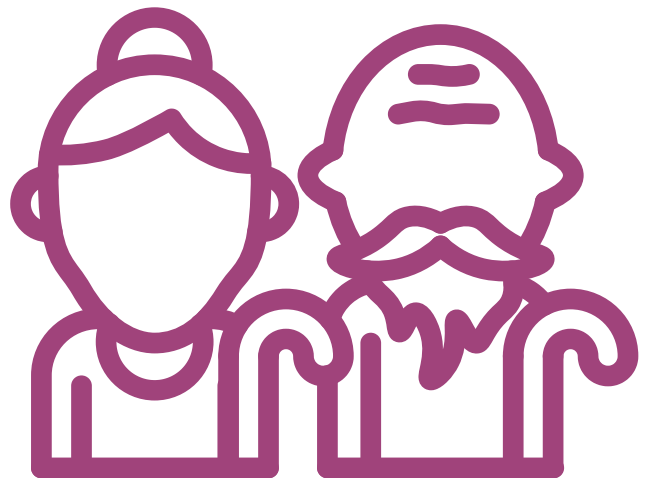


N = 38

100% completion rate



Mean 80.8 years
Range 69-91



11:27

3

Results

Change in PAS

Descriptive Statistics

	Pre-PAS	Post-PAS
Mean ±SD	5.92 ± 3.42	2.24 ± 2.20
Median	5	2
Range	1-15	0-10

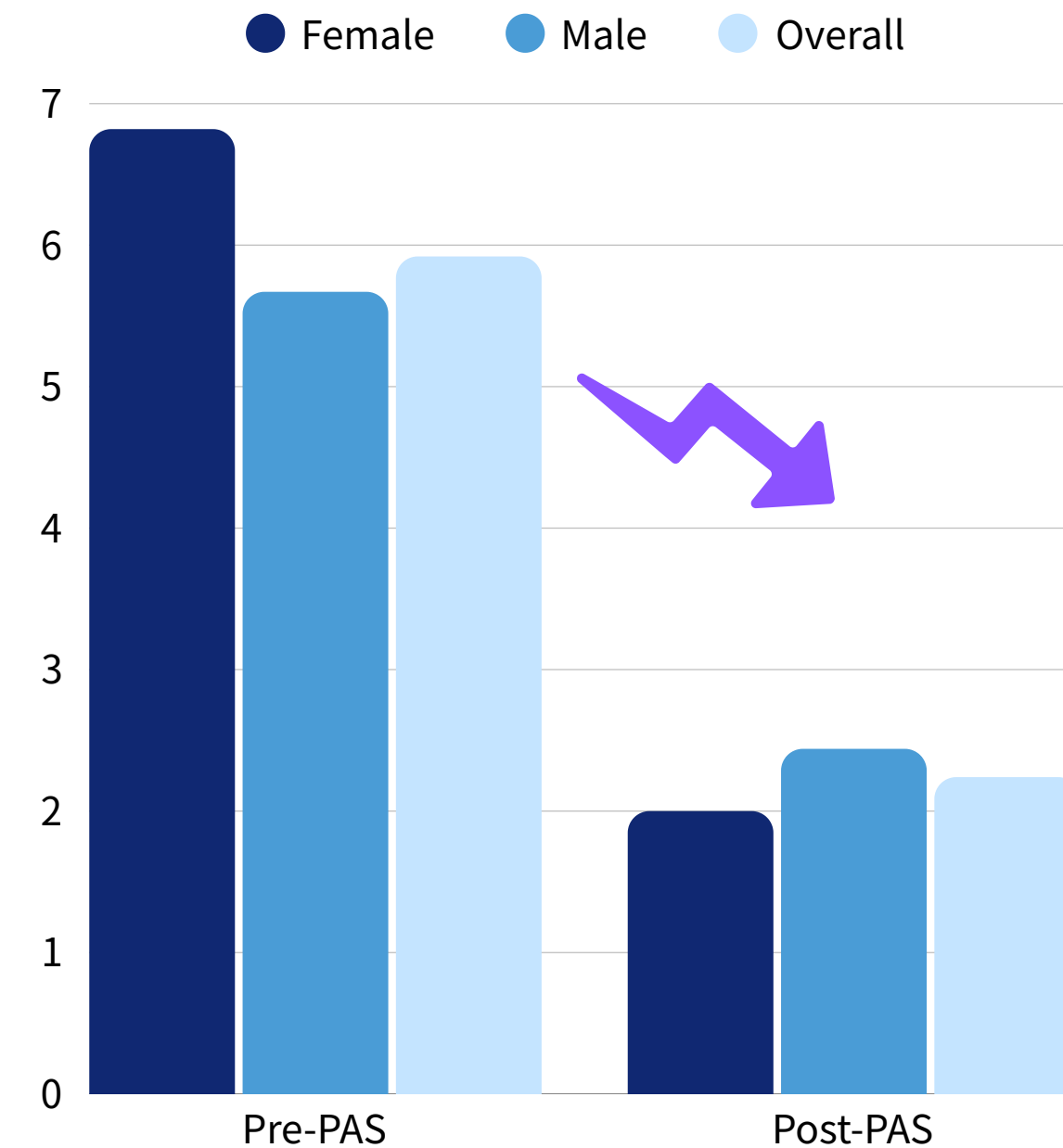
Mean Reduction = **3.68**

% Decrease in Mean PAS = **62.2%**

t(37) = 9.35, p < .001 (two-tailed)

Indicate **statistical significant** reduction in PAS thus **agitation level**

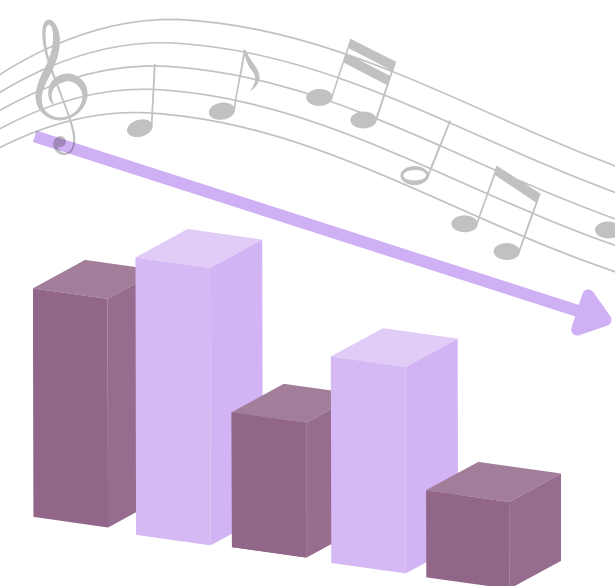
Mean PAS Pre- V.S. Post-Music Intervention



3

Results

Change in PAS



89.5% $\geq 50\%$ reduction in agitation

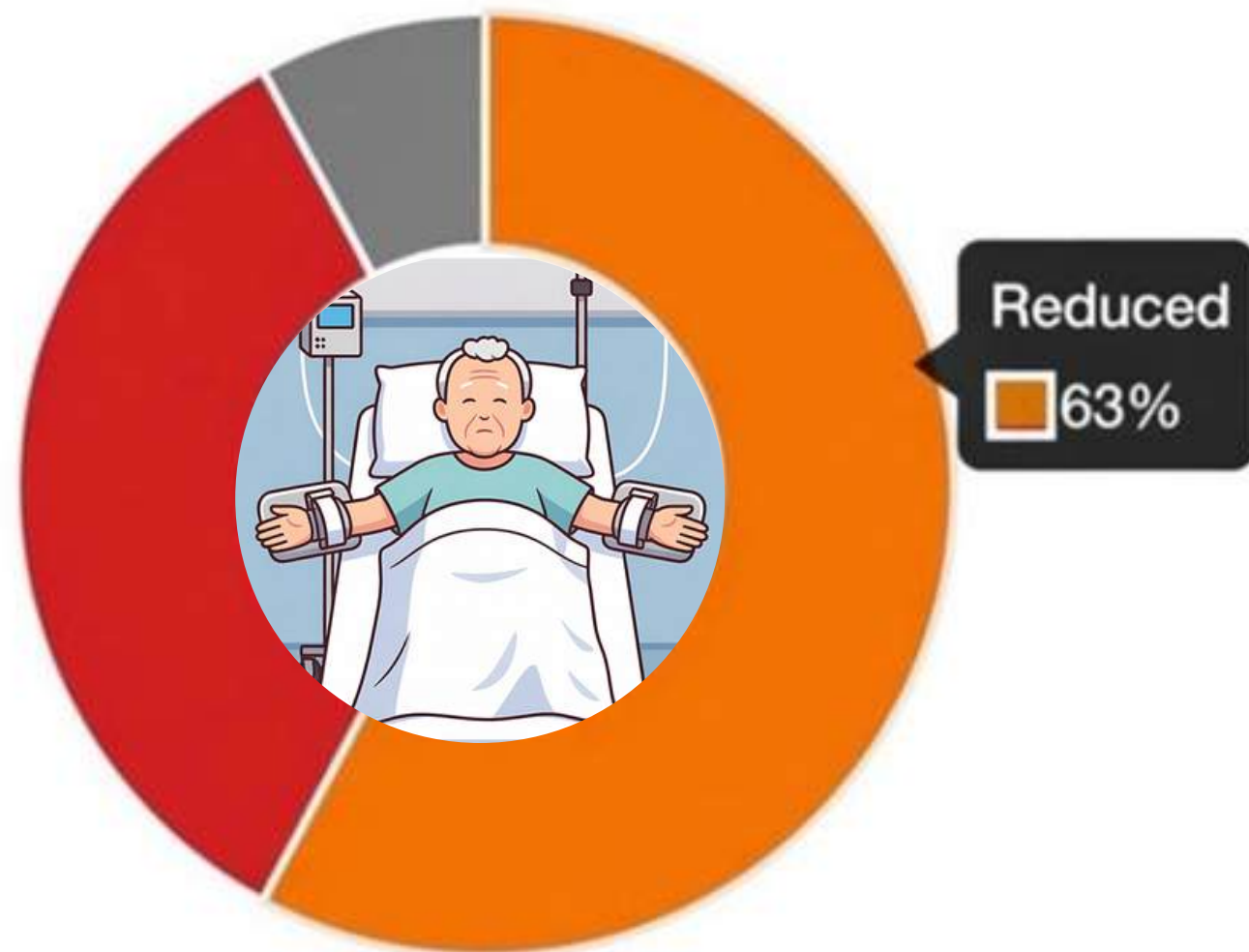
55.3% achieved Post-PAS = 0–1
(minimal / no agitation)

3

Results

Change in Physical Restraint

Physical Restraint Reduction
After Music Intervention



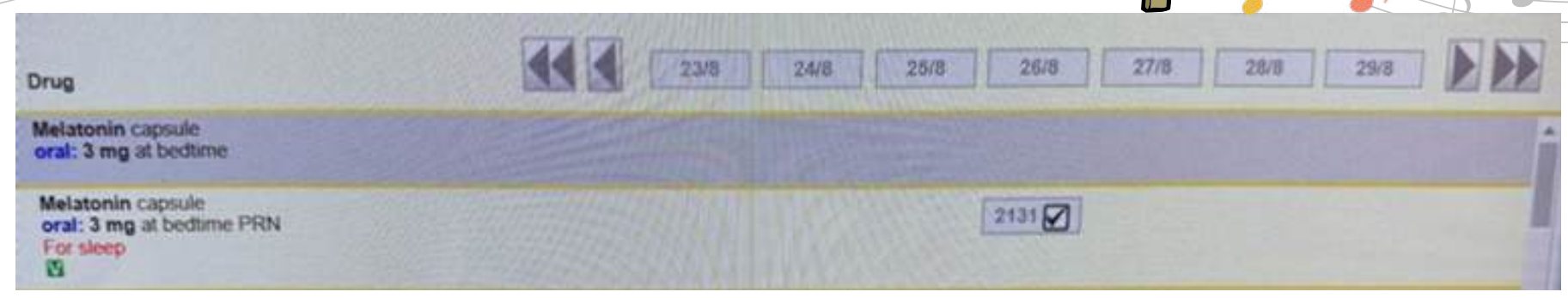
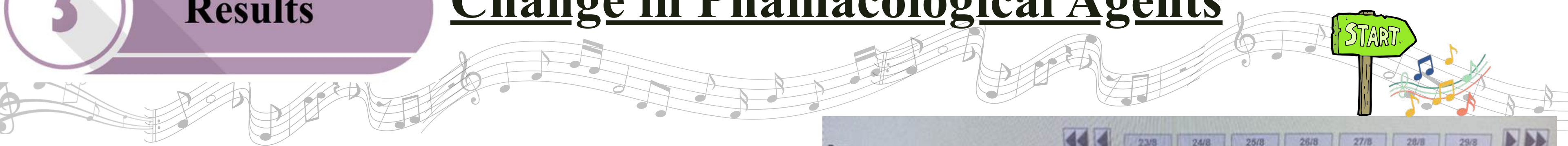
● Reduced ● No Change ● Not Applicable

Discontinued in **62.9%**

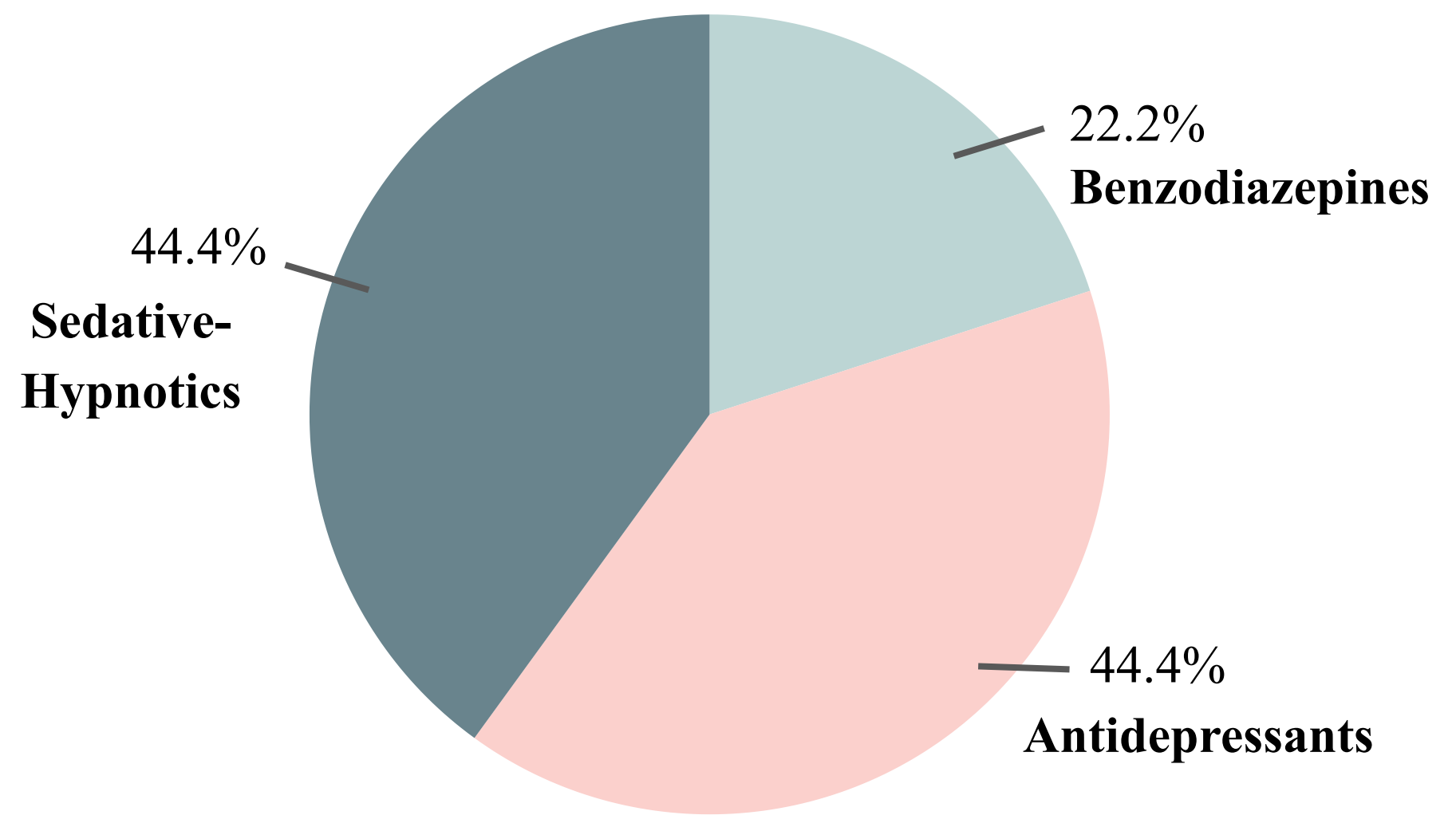
PwD becoming **restraint-free** for an average of **4** days

3 Results

Change in Pharmacological Agents



Pharmacological Agents



Pharmacological agents were reduced in

47.4%
of relevant PwD

Conclusion

Individualised

Music

Intervention



Simple



Economical



Effective



People-centred care

↓
Agitation

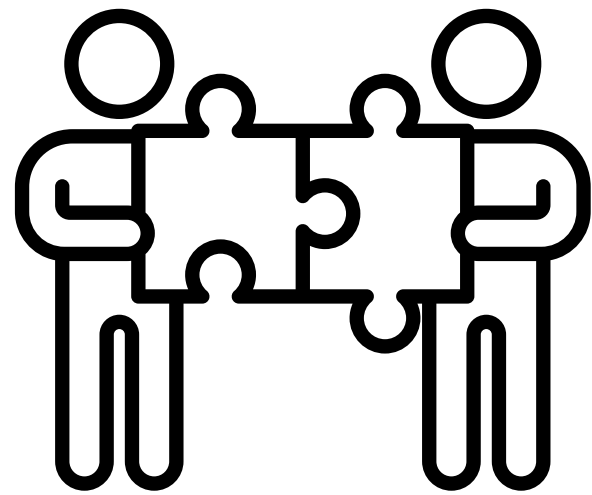
↓
Physical
Restraints

↓
Pharmacological
Agents

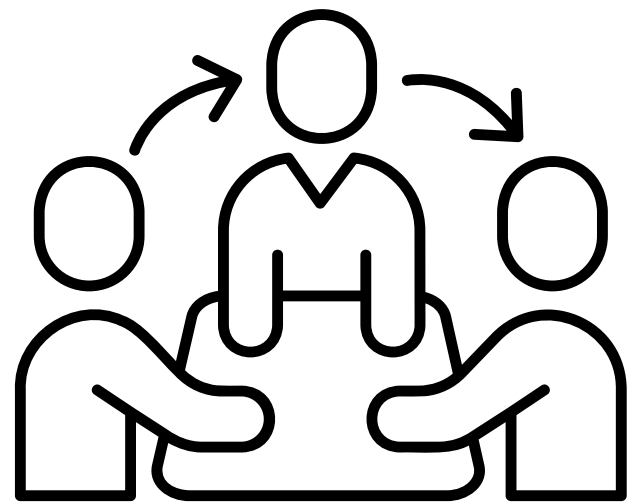




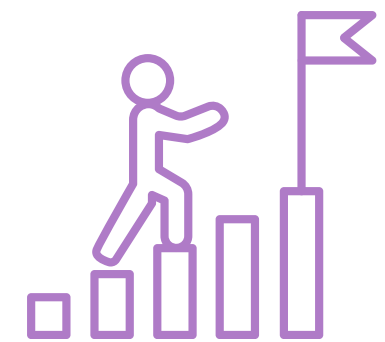
Way Forward



Larger-scale trials



Qualitative exploration



**New Territories East Cluster
Tai Po Hospital**

"Individualised Music Intervention for Patients: Enhancing Well-Being in Dementia Care"

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Introduction

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Objectives

1. Alleviate agitation of PwD on the Pittsburgh Agitation Scale (PAS) after 7 days
2. Promote a restraint-free environment
3. Minimise the use of pharmacological agents

Methods

1. Quasi-experimental pre-post design
2. 38 participants recruited
3. Inclusion criteria: Age ≥65 years, Diagnosed with dementia, Baseline PAS score >0
4. Exclusion criteria: Severe psychiatric conditions

Intervention

From July 2025 to December 2025

- Daily 30-minute individualised music sessions for 7 consecutive days
- Tailored-made playlists according to musical preferences

Assess

- PAS score reduction
- Percentage ↓ in physical restraints use
- Percentage ↓ in pharmacological agents use

Results

- Demographics: mean age 80.8 years, range 69–91, 71.1% male
- Mean PAS score ↓ significantly from 5.92 → 2.24 (p<.001)
- 89.5% showed ≥ 50% reduction in agitation
- Physical restraint was discontinued in 62.9%
- Chemical agents were reduced by 47.4%, including benzodiazepines in 22.2%, antidepressants in 44.4% and sedative-hypnotics in 44.4% of applicable PwD

Example of tailored-made playlists

Leaflet to caregivers to promote continuity of music interventions

Conclusion

- Individualised music intervention, delivered simply and economically, yielded marked reductions in agitation as well as the use of physical restraint and pharmacological agents.
- It is a cost-effective, accessible and sustainable non-pharmacological approach for managing agitation in PwD.
- High-quality evidence focusing on reductions in pharmacological agent use remains limited in Asia.
- Future larger-scale research with larger sample size and more in-depth qualitative exploration of caregiver perceptions and staff feedback is required for ongoing quality improvement and service enhancement.

Individualised Music Interventions - TPE - M&G - 2025





◆ Thank You ◆



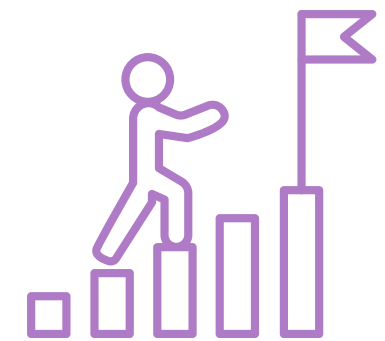


Acknowledgement



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