# Relationship Between Medication Adherence and Health Literacy, Cognition and Knowledge in Atrial Fibrillation Patients

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# Atrial Fibrillation

- 1-2% of population have AF
- 30% of AF patients are aged ≥80 years
- Reduces quality of life, increases hospitalisation and stroke

**Medication Treatment**

- Stroke prevention via anticoagulant
- Symptom management via rhythm/rate control medication
- Management of related conditions

# Medication Nonadherence

14-43% general population

Atrial fibrillation population (12 months postdiagnosis)

- 36.4% Vitamin K agonists
- 20.8% Novel Oral Anticoagulants

*Ho, Bryson & Rumsfeld,Circulation,2009; Martinez et al., Thromb Haemost 2016*

# Factors Influencing Medication Adherence

**Non-modifiable**

- Complex lifestyle or regimen
- Cognitive status
- Education and health literacy

**Modifiable**

- Motivation
- Knowledge and beliefs about disease and treatment

# Study Aims

- To explore medication adherence, cognition, AF knowledge and health literacy in AF patients

- To determine any association between medication adherence and cognition, AF knowledge and health literacy in AF patients

# Study Methods

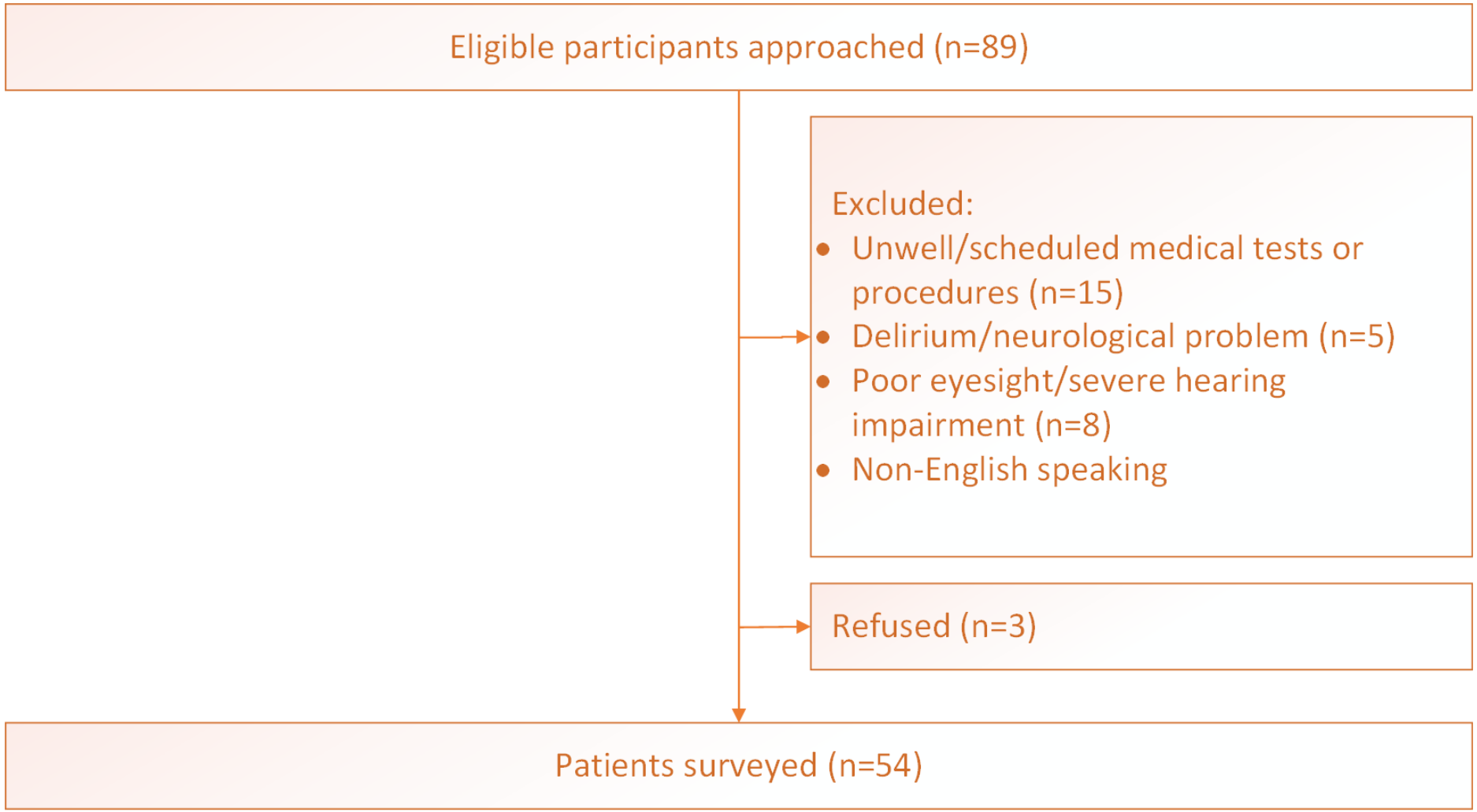
## Sample

- Inclusion: patients admitted with AF cardiology ward Nepean Hospital
- Exclusion: insufficient English or neurocognitive disorder

## Data collection

- Basel Assessment of Adherence to Immunosuppressive Medication Scale (Modified BAASIS)
- Montreal Cognitive Assessment (MoCA)
- AF Knowledge Scale
- Rapid Estimate of Adult Literacy in Medicine Short Form (REALM-SF)
- Medication barriers and facilitators open-ended questions (subsample, n= 24)

# Sampling


Eligible participants approached (n=89)
Excluded:
Unwell/scheduled medical tests or procedures (n=15)
Delirium/neurological problem (n=5)
Poor eyesight/severe hearing impairment (n=8)
Non-English speaking
Refused (n=3)
Patients surveyed (n=54)

# Sample characteristics by medication adherence

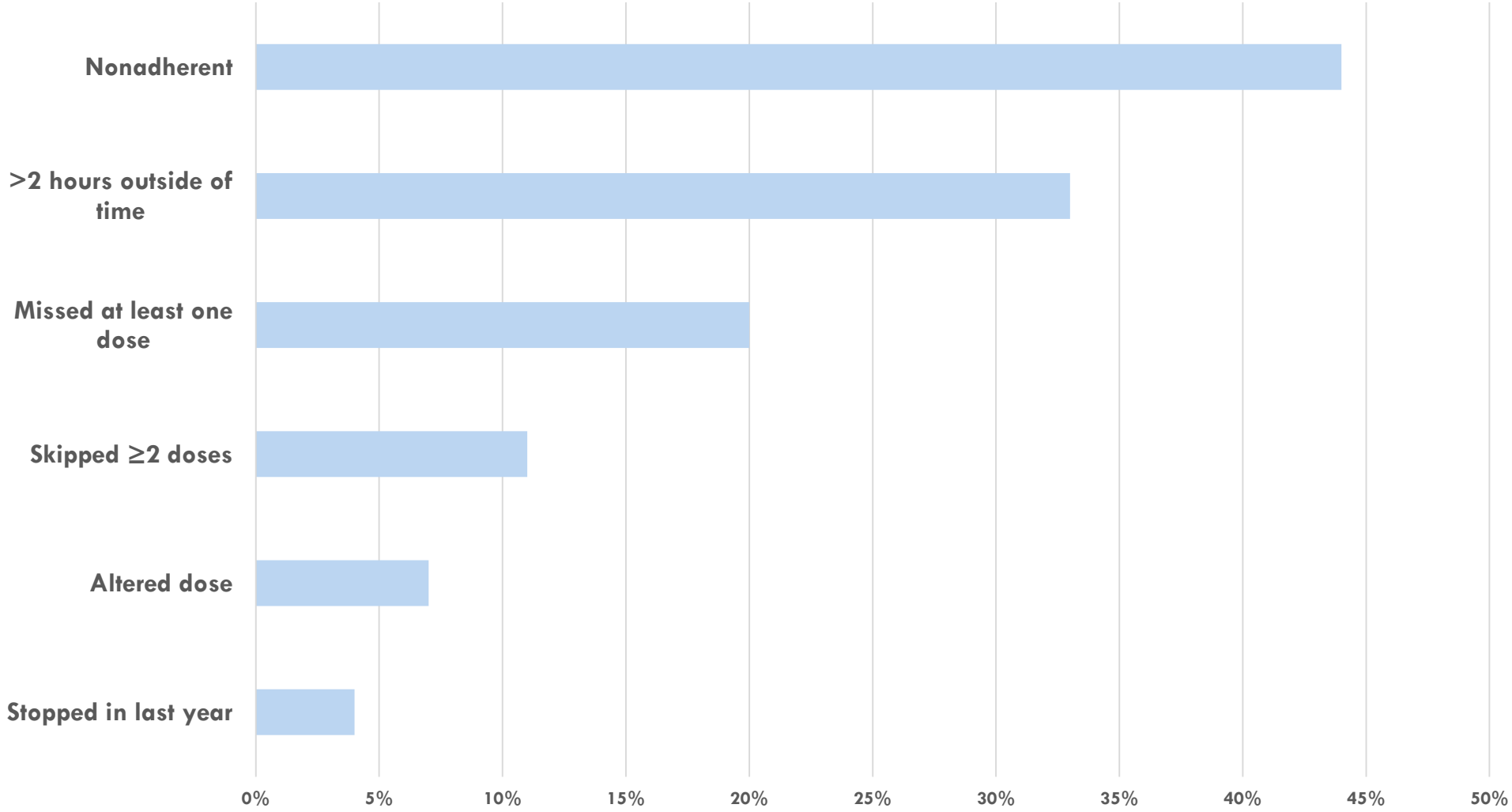
| Socio-demographics | Medication Adherence | |
|---|---|---|
| | Adherent | Non-adherent |
| | 59% | 41% |
| | N (%) | N (%) |
| **Age** | | |
| **Mean (SD)** | 72.8 (8.1) | 67.7 (14.1) |
| **Gender** | | |
| **Male** | 19 (57.5) | 14 (42.4) |
| **Female** | 13 (61.9) | 8 (38.1) |
| **Ethnicity** | | |
| **Caucasian** | 31 (62.0) | 19 (38.0) |
| **Other** | 1 (25.0) | 3 (75.0) |
| **Marital status** | | |
| **De facto/ married** | 22 (59.5) | 15 (40.5) |
| **Widowed/ divorced** | 4 (57.1) | 3 (42.9) |
| **Single** | 1 (25.0) | 3 (75.0) |
| **Education** | | |
| **< high school** | 24 (58.5) | 17 (41.5) |
| **> high school** | 8 (61.5) | 5 (38.5) |

# Sample clinical characteristics by medication adherence

| Clinical data | Medication adherence | |
|---|---|---|
| | Adherent | Non-adherent |
| | N (%) | N (%) |
| **Primary diagnosis** | | |
| Atrial fibrillation | 12 (57.1) | 9 (42.9) |
| Chest pain | 4 (57.1) | 3 (42.9) |
| Chronic cardiac failure | 2 (33.3) | 4 (66.7) |
| **AF Frequency** | | |
| New onset/ paroxysmal | 25 (69.4) | 11 (30.6) |
| Persistent/ permanent | 7 (38.9) | 11 (61.1) |
| **Anti-coagulants** | | |
| Warfarin | 7 (50.0) | 7 (50.0) |
| NOACs | 9 (60.0) | 6 (40.0) |
| **Anti-hypertensives** | | |
| Beta blockers | 19 (55.9) | 15 (44.1) |
| Angiotensin receptor blocker | 6 (66.7) | 3 (33.3) |
| ACE inhibitors | 2 (50.0) | 2 (50.0) |
| **Anti-platelet** | | |
| Aspirin** | 5 (31.3) | 11 (68.8) |
| Clopidogrel | 2 (66.7) | 1 (33.3) |
| **Anti-arrhythmic/rate control** | | |
| Digoxin | 7 (70.0) | 3 (30.0) |

P = .007

# Medication Adherence Issues



# Medication adherence compared for cognitive status, health literacy and AF knowledge

| Variable | N (%) | Medication Adherence | | P-value |
|---|---|---|---|---|
| | | Adherent | Non-adherent | |
| | | N (%) | N (%) | |
| **Cognition** | | | | |
| **Cognitively impaired** | 38 (70.4) | 22 (57.8) | 16 (42.1) | 0.753 |
| **Normal** | 16 (29.6) | 10 (62.5) | 6 (37.5) | |
| **Health literacy** | | | | |
| **High school** | 38 (70.4) | 22 (57.8) | 16 (42.1) | 0.753 |
| **< high school** | 16 (29.6) | 10 (62.5) | 6 (37.5) | |
| **AF Knowledge score** | | | | |
| **Mean (SD)** | 7.2 (2.7) | 6.8 (2.9) | 7.6 (2.4) | 0.319 |
| **(range 0-14)** | | | | (-0.742 – 2.237) |

# Self-reported facilitators and barriers to medication adherence (n= 24)

| Categories | | Medication Adherence | | |
|---|---|---|---|---|
| | | Adherent N (%) | Non- adherent N (%) | P-value |
| **Facilitators** | Assistance | 11 (55.0) | 9 (45.0) | 0.855 |
| | Routine | 9 (69.2) | 4 (30.8) | 0.107 |
| | Awareness | 6 (60.0) | 4 (40.0) | 0.682 |
| **Barriers** | Medication concerns | 1 (12.5) | 7 (87.5) | 0.004 |
| | Forgetfulness | 0 (0.0) | 4 (100.0) | 0.200 |
| | Difficult routine lifestyle | 0 (0.0) | 3 (100.0) | 0.044 |

# Limitations

The sample may not be representative

- small numbers
- cardiac inpatients in one hospital
- English-speaking

Inconsistencies between medication adherence measured by BAASIS versus self reports

# Conclusions

- Medication adherence not influenced by cognitive status, health literacy or AF knowledge
- Patients use a variety of strategies to support medication adherence including routine, prompts and family
- Impaired cognitive status was common
- AF knowledge was suboptimal

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