

Assessing Medication Adherence Risk Levels and Usage Patterns among Elderly Residents in Selected Care Homes: A Cross-Sectional Study



A presentation by

Sandhya Khatri

Durga Bista

Rojeena Koju Shrestha

Ramesh Sharma Poudel

Background

- **General Context**

- Ageing population is increasing globally and in Nepal
- Elderly population commonly suffer from **multiple chronic diseases (1)**
- Commonly **hypertension, diabetes, cardiovascular diseases, arthritis**
- Multiple diseases often lead to the use of multiple medications (**polypharmacy** i.e. 5 or more drugs)
- Polypharmacy increases risk of **potentially inappropriate medications (PIMs) use and non-adherence**

Background

- **Nepal & Study Gap**

- Elderly population in Nepal: **2.97 million (10.21%)**, increasing rapidly (2)
- Care homes/Elderly homes – relatively new concept (3)
- Changing family structure & modernization – more elderly living in care homes
- Around 70 private & 1 governmental elderly homes (~1500 residents) (4)
- Medication use pattern and adherence risk levels are not well studied in these settings

Objectives

- **General objective**

- To assess the medication risk levels and usage patterns among elderly residents in selected care homes of Nepal

- **Specific objectives**

- To examine the common patterns of medication use, types of medications and frequency of prescriptions
- To analyze the adherence risk level to prescribed medications using a validated tool
- To assess the factors affecting medication adherence risk level in elderly population residing in care homes
- To identify possible PIMs

Methodology

Study Design

- A cross-sectional design

Study site and Sample size

- 16 elderly homes approached
- 1 governmental and 5 private elderly homes provided approval for the study
- Purposive sampling was done

Methodology

Inclusion Criteria

- Must be residing in elderly homes
- Must be of the age 60 and above
- Must be willing with provided consent

Exclusion Criteria

- Unable to communicate effectively
- Participants with acute medical condition requiring hospitalization in the study period

Methodology

Research Instrument

- A validated proforma created for socio-demographic data
- Medication Record Review for pattern of medication use
- **Medical Safety Alert Tool for Elderly (MeSATE)** used for adherence risk level assessment
 - Scores categorized as **low risk (0-40%)**, **medium risk (41-80%)**, and **high risk (more than 80%)**
- **Beers Criteria** used to identify PIMs
- **IBM SPSS Statistics 23** and **Microsoft Excel** used for data analysis (frequency, percentages, association (chi-square test))

Results

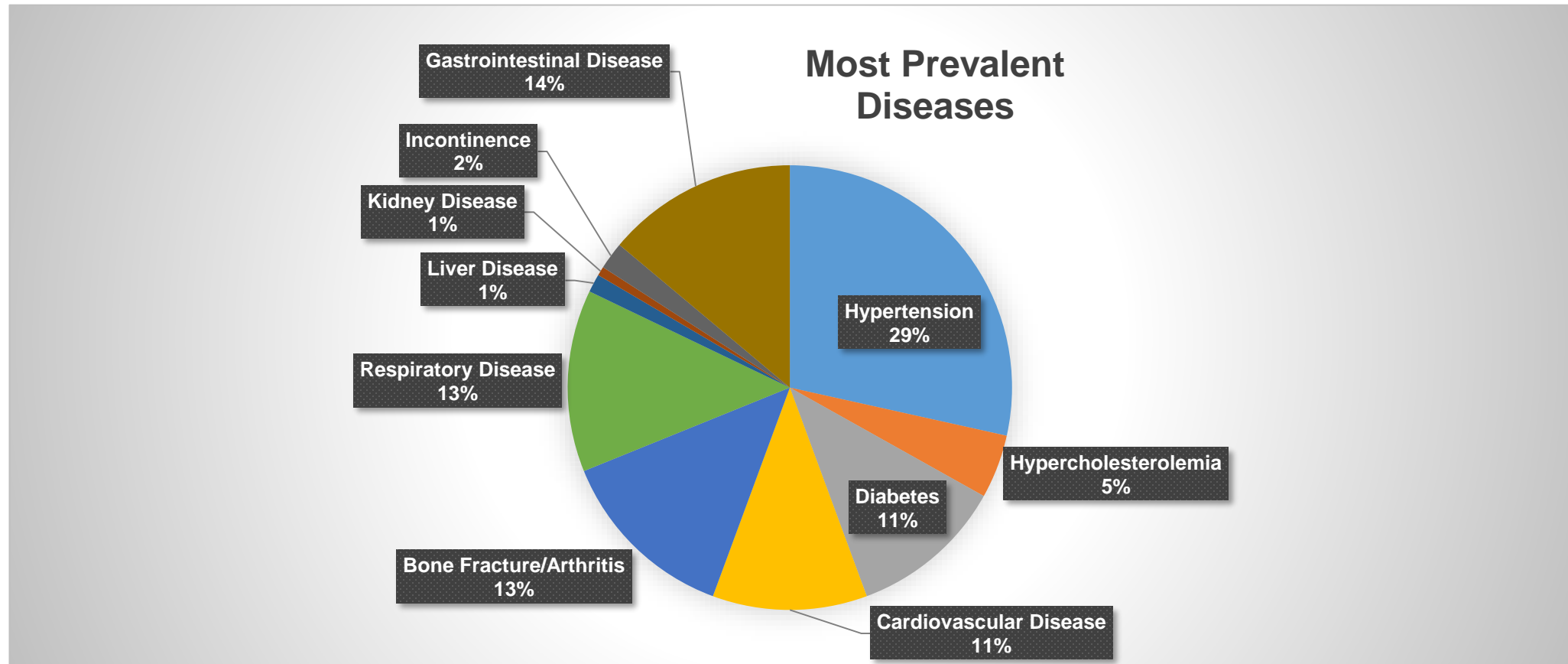
Socio-demographic				
Age	Percentage		Gender	Percentage
60-75	50.6		Male	22.9
76-90	42.2		Female	77.1
90+	7.2			
Education	Percentage		Taking medications	Percentage
Primary or less	91.6		Yes	87.9
Secondary	3.6		No	12.1
Higher Secondary	2.4			
Bachelors' or Higher	2.4			

Results

Socio-demographic	
Functional Assessment	Percentage
Hearing issue	34
Visual issue	68
Cognitive issue	0
Language barrier	0
Functional issue	0

Results

- Most prevalent diseases – **Hypertension (29%)**, **Gastrointestinal Disease (14%)**, **Arthritis (13%)**, **Respiratory disease (13%)**



Results

- Most used drugs – **Antihypertensive**
- 1 out of 6 care homes had up to date prescription; others just had lists
- Medication record management unsatisfactory
- Major untreated disease condition – **arthritis/bone disease** and **psoriasis**
- **30.1%** reported to have **polypharmacy**

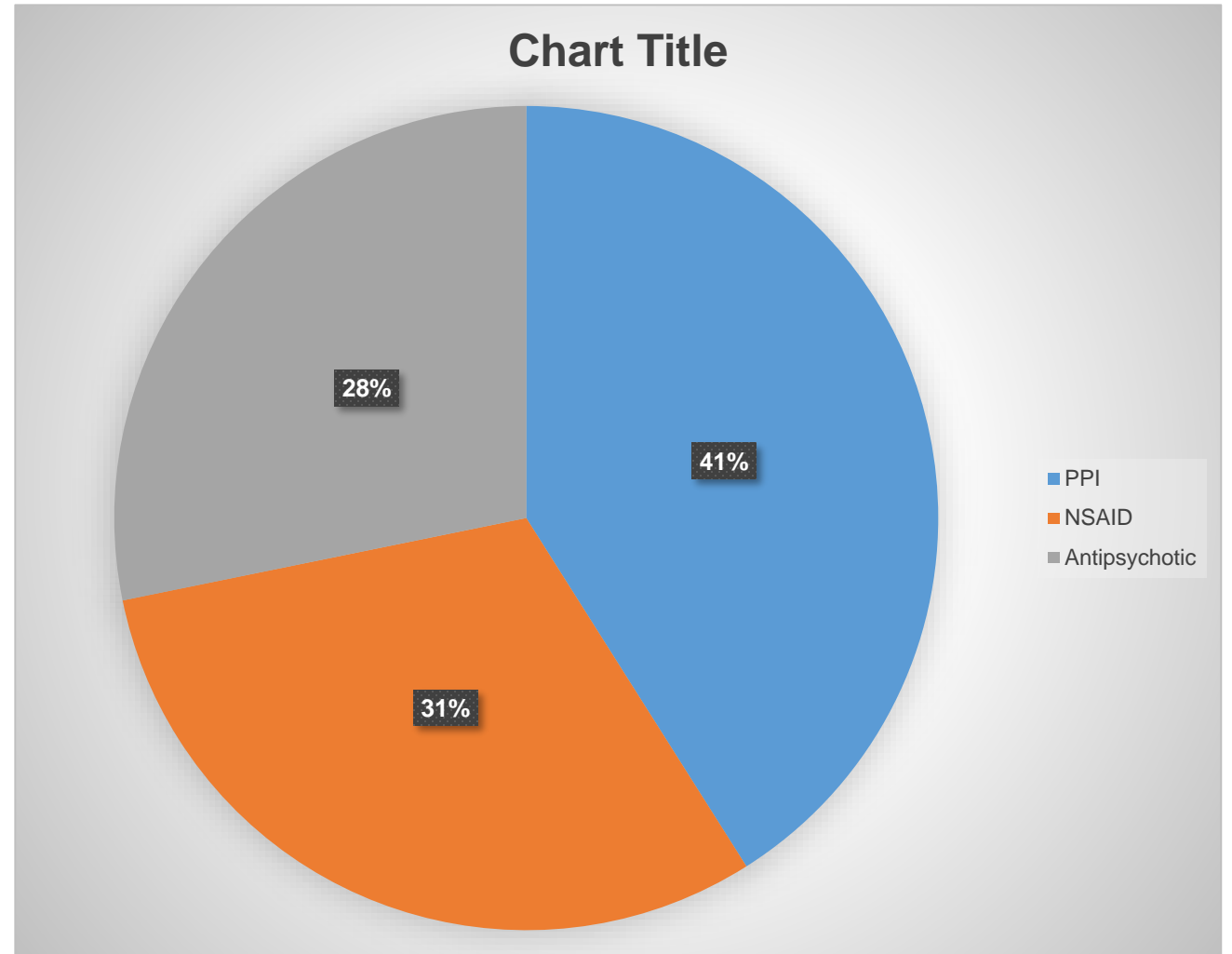
Results

Adherence Risk Level	Percentage
Low Risk	62.7
Medium Risk	36.1
High Risk	1.2
Total	100

- None of the socio-demographic factors showed association with adherence risk level ($p > 0.05$)

Results

- **33.7%** population under **PIMs**
- **Proton pump inhibitors** and **painkillers (NSAID)** and **antipsychotic** medications were most common **PIMs**



Discussion

Key Findings Interpretation

- Hypertension most prevalent – explains high use of antihypertensive
- High comorbidity burden – increased medication use and complexity

Polypharmacy & PIMs

- Significant polypharmacy observed
- Frequent use of PIMs (PPIs, analgesics, Antipsychotic)
- Suggests irrational prescribing & lack of medication review

Discussion

System-Level Gaps

- Poor medication record management in most care homes
- Indicates weak monitoring & continuity of care
- High risk of medication errors and inappropriate therapy

Adherence Insight

- No association with socio-demographic factors
- Adherence likely influenced by:
 - Institutional support
 - Presence of healthcare professionals
 - Medication management systems

Discussion

Untreated Conditions

- Arthritis & psoriasis commonly untreated
- Reflects gaps in comprehensive patient care

Conclusion

- Polypharmacy & PIMs are highly prevalent
- Overall adherence risk: low to moderate
- Major issue: **inappropriate medication use, not adherence**
- Key contributing factors:
 - Poor record management
 - Lack of structured healthcare support
- Implications:
 - Need for rational prescribing
 - Regular medication review
 - Integration of pharmacists in care homes

Takeaway Message

Findings highlight the need for geriatric-focused medication management policies in Nepal as well as proper supervision in care home settings.

Acknowledgement

- I would like to express my sincere gratitude to my supervisors for continuous guidance and support
- I am thankful to Kathmandu University for academic support
- I extend my appreciation to all participating elderly care homes and residents
- I would like to thank my husband for the continuous support and encouragement throughout the study period.
- Special thanks to all individuals who directly or indirectly contributed to this study.

References

1. Thapa, N. R., & Rai, M. K. (2022). Morbidity Patterns and Associated Factors among Elderly People: The Case of Sunkoshi Rural Municipality, Nepal. *Humanities and Social Sciences Journal*, 14(1), 90-100. Retrieved November 21, 2024, from <https://www.nepjol.info/index.php/hssj/article/view/58000>
2. Chalise, H. N. (2023, May 31). Aging Trend and Situation in Nepal. *Advances in Aging Research*, 12, 39-48. doi:<https://doi.org/10.4236/aar.2023.123003>
3. Devi, S. S. (2019, December). An ethnography of old-age homes and senior-citizens in Devghat. *Research Nepal Journal of Development Studies*(2), 129-141. Retrieved November 21, 2024, from https://www.researchgate.net/publication/341921198_An_ethnography_of_old-age_homes_and_senior-citizens_in_Devghat
4. Khanal, P., Rai, S., & Chalise, H. N. (2018, March 9). Children's Migration and Its Effect on Elderly People: A Study at Old Age Homes in Kathmandu. *American Journal of Gerontology and Geriatrics*, 1(1). Retrieved November 22, 2024, from https://www.researchgate.net/publication/323827072_Children's_Migration_and_Its_Effect_on_Elderly_People_A_Study_at_Old_Age_Homes_in_Kathmandu



Sandhya Khatri

- ❑ Masters in Pharmacy Student (Pharmaceutical Care), Kathmandu University
- ❑ Research focus: Medication use patterns and adherence risk levels in elderly care homes
- ❑ Aims to improve quality of care in elderly through safe prescribing practices and proper medication management