



PREVALENCE AND ASSOCIATED RISK FACTORS OFFALLS AMONG PARKINSON DISEASE PATIENTS IN TWO TERTIARY HOSPITALS, ADDIS ABABA, ETHIOPIA

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ABSTRACT

Introduction: Falls are a significant cause of disability, lost independence and reduced quality of life in people with Parkinson's disease. Prospective studies show that between 45% and 68% of people with PD will fall each year, with a large proportion (50–86%) falling recurrently.

Objectives: To assess the prevalence of falls, their associated risk factors among Parkinson's disease patients having follow up at TikurAnbesa Specialized Hospital and Zewditu Memorial Hospital Neurology outpatient clinics, Addis Ababa, Ethiopia.

Methods: Institution based cross sectional study was conducted among Parkinson's disease patients on follow up at TikurAnbesa Specialized Hospital and Zewditu Memorial Hospital Neurology outpatient clinics. Data was collected by interviewer administered questionnaire and analyzed using SPSS V27 software package.

Results: Data from 127 participants were collected and analyzed. The mean age of the recruited participants was 64 ± 12 years, and the males account for 70%. The mean duration of disease was 5.6 ± 4.6 years. 48 (37.8%) respondents had history of falls with 13 (27%) having single fall and 35 (63 %) with recurrent falls. Median occurrence of fall was 6 months after PD diagnosis. Duration of illness and severity of disease as quantified by Hoehn and Yahr stage independently predicts risk of fall.

Conclusion: In this study the prevalence of fall among Parkinson disease patients is 37.8% which is consistent with previous studies. Among all sociodemographic and clinical factors, duration of illness and Severity of Parkinson disease were independent predictors of falls.

Acknowledgement: I would like to express my deepest gratitude to my advisers; Dr. Abenet Tafesse (MSC. MD, Consultant Internist and Neurologist, Associate Professor of Neurology), Dr. Fikru Tsehayneh (MD, Assistant Professor of Neurology), Dr. Hanna Assefa (MD, Assistant Professor of Neurology) and, Dr. Teklil Hagos (MD, Assistant Professor of Neurology) for their valuable and priceless advice and support in selecting this research topic and performing this research. My gratitude also goes to Addis Ababa University that provided me the opportunity to perform this research. Finally, I would like to thank the nursing staffs of Tikur Anbessa Specialized hospital and Zewditu memorial hospital Neurology departments and the study participants who were very cooperative and helpful in providing all the necessary information that enabled me in data collection.

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List of abbreviations

AAU: Addis Ababa University

FOG: freezing of gait

IRB: Institutional Review Board

OR: odd's ratio

PIGD: postural instability and gait difficulty

PD: Parkinson disease

REM: rapid eye movement

RBD: rapid eye movement behavioral disorder

SPSS: Statistical Package for the Social Sciences

TASH: TikurAnbessa Specialized Hospital

UPDRS: unified Parkinson disease rating scale

UKPDSBB: United Kingdom Parkinson disease society brain bank

ZMH: ZewdituMemmorial Hospital

Chapter one: Introduction

1.1 Back ground:

Parkinson disease is a complex, multisystem disorder with both neurologic and systemic nonmotor manifestations. It is neurodegenerative in nature in which disordered balance, gait, and falls are universal problems that can be present at initial diagnosis, and which progress over time.

Freezing of gait is a particularly debilitating feature of PD that becomes more prevalent over time with disease progression, being present in approximately 7% after 2 years of diagnosis and 28% after 5 years. ⁽¹⁾

The course of the disease is chronic and progressive, and may be complicated by a wide range of motor and non-motor features, many of which contribute to increased disability as well as diminished quality of life in patients and caregivers. However, there is a remarkable interindividual heterogeneity in the course of PD. ^(2,3)

Approximately 1–2% of the population over 65 years suffers from PD. This figure increases to 3% to 5% in people 85 years and older. ^(3,4)

However, a low prevalence of Parkinson's disease has been reported in the Sub-Saharan Africa, ranging from 7/100,000 in Ethiopia to 67/100,000 in Nigeria. Community-based prevalence study in sub-Saharan Africa reported a mean age at onset of 69.4 years. ^(7,8,9)

Despite being a major cause of morbidity and mortality, falls can be predicted and prevented using physical interventions or utilizing technologically advanced monitoring methods according to individual risk factor profiles. ^(23,24)

1.2 Statement of the problem:

Falls are a significant cause of disability, lost independence and reduced quality of life in people with Parkinson's disease. Prospective studies show that between 45% and 68% of people with PD will fall each year, with a large proportion (50–86%) falling recurrently. ⁽¹¹⁾

Many risk factors for falls in PD have been identified. These include freezing of gait ⁽¹⁶⁾, poor leaning balance ⁽¹⁵⁾, previous falls, lower limb weakness and slow gait speed ⁽¹⁷⁾.

Recent evidence suggests that early autonomic impairment such as orthostatic hypotension occur prior to the appearance of the typical motor deficits associated with the disease, which may also contribute for an increased risk of mortality, falls, and trauma-related to falls. ⁽¹⁹⁾

The consequences of falls are devastating and include restriction of activities of daily living, fear of falling, high levels of caregiver stress and injuries. ^(5,6,20) In fact, the incidence of hip fracture is four times that for older people of the same age without PD. ⁽²²⁾ This has significant economic consequences as the costs of fall-related fractures in people with PD are close to double those in healthy older people. ^(20,21)

However, no study to date in Ethiopia has tried to see the frequency of falls and their associated risk factors among patients with Parkinson disease.

This research explored the burden of falls and their associated risk factors among PD patients on follow-up at TikurAnbesa Specialized Hospital and Zewditu Memorial Hospital attending movement disorder clinics. It will pave a way to prevention of falls and resulting morbidity and mortality among PD patients in the country as a whole.

Chapter two:

2.1 Literature review

Falls remain a disabling feature of Parkinson's disease. Several studies have examined possible ways of predicting falls, with previous occurrence of falls being one of the main predictors and several motor factors including measures assessing postural stability, abnormal posture, freezing of gait, impairment of rapid alternating movement, and dyskinesia identified. (15,16,17)

Other nonmotor features including sleep, particularly rapid eye movements, sleep behavioral disorder, autonomic symptoms, depression, cardiovascular and musculoskeletal comorbidity, and medication use, such as hypnotics and antidepressants, has also been implicated. (10,14,19)

A prospective study from Australia; published in 2019 involving 113 PD patients, aimed to contrast fall rates and circumstances as well as a range of disease-related, clinical, and functional measures between the PD subtypes. Compared with non-PIGD participants, PIGD participants were significantly more likely to suffer more falls overall. Falls due to freezing of gait, balance-related falls and falls at home were also significant. The PIGD group also performed significantly worse in a range of fall-related clinical and functional measures including general cognitive status, executive function, quadriceps muscle strength and postural stability. These findings document the extent to which people with the PIGD subtype are at increased risk of falls, the circumstances in which they fall and their disease-related, clinical and functional impairments. (12)

A retrospective cross-sectional study aiming at identifying modifiable medical causes of falls was published by the University of London, UK and published in the year 2015. Among cohort of 87 PD patients, fallers had longer disease duration, higher Levodopa-equivalent doses, greater 'On' time with dyskinesia. In addition, non motor symptoms such as severity of psychosis, executive cognitive impairment, autonomic (particularly cardiovascular) dysfunction and sleep disturbances (particularly REM sleep behavioral

disorder) were significantly associated with falls (all $P < 0.005$). However, patients with falls did not differ from non-fallers in age or overall motor UPDRS scores.⁽¹⁰⁾

A 2016 Nigerian study, involving 81 PD patients showed that falls were about three times more common in PD patients. Majority had recurrent falls. Of the falling patients, 67.7% sustained injuries and were admitted for inpatient treatment. According to the study, the independent statistical predictors of falls were fear of falling, disease severity and disease duration.⁽¹³⁾

A Meta-Analysis of Six Prospective Studies of Falling in Parkinson's disease in 2007, involving 473 patients also showed a 3-month fall rate of 46%. The best predictor of falling was two or more falls in the previous year (sensitivity 68%; specificity 81%).⁽²⁶⁾

2.2 Significance of the study:

Many studies show that falls are a significant cause of disability, lost independence and reduced quality of life in people with Parkinson's disease. According to these studies, the consequences of falls are devastating and include restriction of activities of daily living, fear of falling, high levels of caregiver stress and injuries.⁽²⁰⁾

Despite being a significant public health problem (i.e. compromised quality of life of patients and their care givers, complications resulting from falls and economic impact on the country as a whole), it was given less attention in sub Saharan Africa, particularly in Ethiopia-as there is no published research on this particular issue.

The prevalence of falls in Parkinson disease patients was largely unknown in Ethiopia. Our study is the first to explore the topic and tried to associate predictors of falls among PD patients.

Chapter three: Study design and methods

3.1 Objectives of the study:

3.1.1 General objective:

- To assess the prevalence of falls among patients with Parkinson disease attending outpatient clinics at TASH and ZMH, Addis Ababa, Ethiopia

3.1.2 Specific objectives:

- To assess the prevalence of falls
- To assess associated risk factors of falls
- To assess consequences of PD related falls

3.2 Materials and methods:

3.2.1 Study area: The study was conducted in two hospitals in Addis Ababa, Ethiopia__TikurAnbessa Specialized Hospital, and Zewditu Memorial Hospital.

3.2.2 Study period:The study was conducted from July 1st/2021 to September 30/2021.

3.2.3 Study design:Institutionbased cross-sectionalstudy

3.2.4 Population:

3.2.4.1 Source population: patients with Parkinson's disease in Ethiopia.

3.2.4.2 Study population:patients with Parkinson's disease who are attending neurology outpatient clinics in TASH and ZMH

3.2.5: inclusion and exclusion criteria

3.2.5.1 Inclusion Criteria:

- ✓ Allpatients with the clinical diagnosis of PD, according to the UKPDSBB criteria
- ✓ Who can stand and walk
- ✓ Who can give consent

3.2.5.2 Exclusion criteria:

- ✓ Patients who did not give consent
- ✓ Atypical Parkinsonian syndrome
- ✓ Totally bed ridden or wheelchair bound

3.2.6 Sampling technique and sample size:

3.2.6.1 Sampling technique:the sample size was calculated using normal approximation to the single population proportion formula. As there is no previous prevalence study done in Ethiopia on falls in PD, we assume it to be 50% for optimum sample size. From monthly clinical audits, average number of PD patients seen per month was 54 (33 in TASH and 21 in ZMH). So, during the three-month study period, total number of cases estimated to be 162.

3.2.6.2 Sample size:

$$n = \frac{NZ^2pq}{d^2(N-1)} + Z^2pq$$

Where

n is the required sample size

N is the population size(162)

p and **q** are the population proportions. (0.5 in this case)

z is the value at 95%confidence interval, which is 1.96.

d is the accuracy of the sample proportion, which is 0.05.

$$n = \frac{162(1.96)^2 0.5 \times 0.5}{(0.05)^2(162-1)} + (1.96)^2 0.5 \times 0.5$$

$$= 114$$

$$= 114$$

Taking 10% attrition, which is 11, the final sample size for this study was

$$n = \underline{125}$$

3.3 Variables of the study:

3.3.1 Dependent variables:

- Presence of fall among PD patients

3.3.2 Independent variables:

3.3.2.1 Socio demographic variables:

- Age
- Sex
- Marital status
- Occupation
- Educational level

3.3.2.2 Relevant clinical information:

- Duration of illness
- Comorbid medical illnesses
- Medication history
- History and frequency of falls
- History of associated injury during falls
- Circumstances surrounding falls
- Gait and balance stability

3.4 Data collection

All PD patients who came for refill to the Neurology outpatient clinics of TASH and ZMH and fulfill the inclusion criteria were recruited. Data was collected by physicians who work at respective sites, and data collectors were briefed about what to do on-site and supervised. Detailed questionnaire (interviewer administered) was prepared about sociodemographic data and relevant clinical information about falls, circumstances surrounding the incident and associated injuries. Targeted physical exam was done including supine and sitting BP measurements. Tremor, postural stability and gait was assessed using the UPDRS motor examination section which is validated and widely used in researches⁽²⁵⁾

3.5 Data quality control:

The questionnaire was translated to local language (Amharic) to be understood by all participants and translated back to English during analysis. Pre-test was done one week before the start of actual data collection at TASH movement outpatient clinic and the results were not included in the main study.

Based on the finding from the pretest, the questionnaire was revised and adopted and time needed for interview was estimated.

The data collectors were supervised and the filled questionnaires were checked by the principal investigator.

3.6 Data processing, analysis and the statistical Package:

Data was entered, stored and analyzed using Statistical Package for the Social Sciences (SPSS) version 27. Frequency and percentage were used to describe the data. Crude and adjusted OR were analyzed using logistic regression and the level of significance of association determined at P- value <0.05.

3.7 Operational definition of terms

Atypical Parkinsonian disorders: degenerative diseases that share some of the features of Parkinson's disease, but different pathology and lesser response to levodopa.

Fall: to drop or to come-down on to the ground under the force of gravity.

Freezing of gait: sudden and short episode of an inability to move the feet forward despite the intention to walk.

“ON-OFF” phenomenon: a switch between mobility and immobility in levodopa-treated patients, which occurs as an end-of-dose or “wearing off” worsening of motor function.

PIGD: subtype of PD which has predominant motor disturbances of posture and gait.

3.8 Ethical considerations:

Ethical clearance was obtained from the research review committee of the department of neurology and the Institutional Review Board (IRB) of college of health sciences, Addis Ababa University. Permission Letters were requested for the respected authorities of the study sites. The data collectors clearly explained the aims of the study for study participants. Information was collected after obtaining verbal consent from each participant.

Chapter four: Results and Discussion

Results:

127 consented respondents who had completed the questionnaire were analyzed (

Table 1). Normally distributed continuous variables were assessed using independent samples *t*-test. Categorical variables were tabulated and statistically assessed for association using the χ^2 test to compare falling with non-falling patients.

Logistic regression was performed to evaluate the fall predictors. All variables that showed association with falls in univariate analysis were included in the regression model.

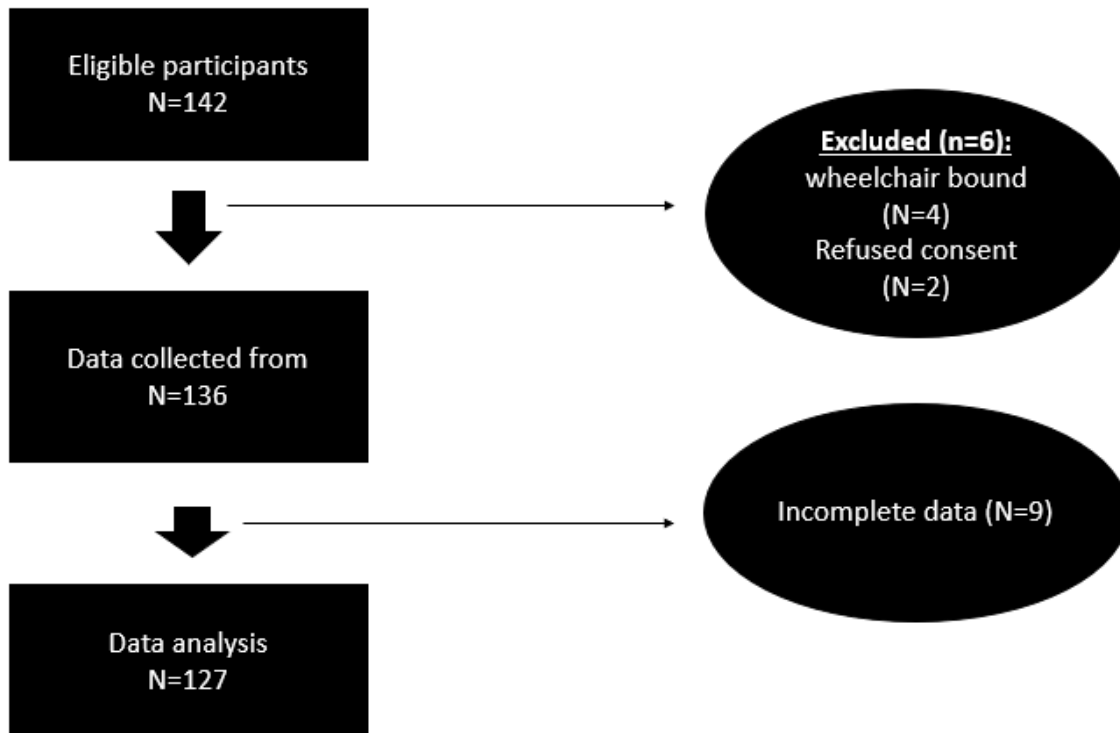


Table 1: sociodemographic characteristics of participants (n=127)

Variable	Number	Percentage (%)
Gender		
Male	89	70
Female	38	30
Age group in years		
21-40	2	1.6
41-60	48	38
61-80	70	55
>80	7	5.5
Marital Status		
Single	3	2.4
Married	119	94
Divorced	1	0.8
Widowed	4	3
Occupation		
Farmer	19	15
Housewife	28	22
Private	45	35
Government	35	28
Educational level		
Can't read and write	27	21
Primary School level	42	33
Secondary School level	33	26
College level and above	25	20

The mean age of the recruited participants was 64 ± 12 years, and the males account for 70%. The mean duration of disease was 5.6 ± 4.6 years.

120 of the participants (94 %) were on medications, with 55 (43.3%) on carbidopa-levodopa, 1 (0.8 %) on trihexyphenidyl and 64 (50.4%) on both anti-PD medications. Seven study participants (5.5%) were not taking any medication.

50 participants (39%) had comorbid illnesses; 11 (8%) Hypertension, 8 (6%) Diabetes, 3 (2.4%) cardiac illness, 4 (3%) stroke and, 14 (11%) multiple comorbidities.

Median occurrence of fall was 6 months after PD diagnosis. 48 (37.8%) respondents had history of falls with 13 (27%) having single fall and 35 (63%) with recurrent falls (Figure 2). 43 (89.6%) of falling PD patients reported the falls occurred while walking due to loss of balance, while 3 (2.4%) of falls occurred during climbing stairs up/down. Four (8.3%) of the falling respondents sustained fracture of long bones, 18 (37.5%) sustained abrasions/lacerations, while 26 (54%) didn't report any injury during the incidents. (Figure 3)

There were no statistically significant differences in gender, educational level and occupation between the falling and non-falling patients. The mean age of falling patients was 68 years, while the mean age of non-falling patients being 62 ($P < 0.04$). Falling patients reported having longer disease durations with a median duration of 7.5 years as opposed to 4.4 years among non-falling patients ($p < 0.001$)

Patients with falls, when compared to non-falling patients, had worse PD severity as measured using UPDRS motor subscale (Posture, gait, stability with pull test) ($p < 0.001$), and high Hoehn and Yahr scale ($P < 0.001$).

Comorbid illnesses, orthostatic hypotension and tremor severity didn't statically predict risk of falls.

Bivariate logistic regression was modeled with fall being the independent variable. Variables that showed statistical significance during univariate analysis were inputted into the model. The results showed that duration of illness in years [odds ratio (OR): 1.231, 95% confidence interval (CI): 1.026-1.476] and PD severity as scored by Hoehn and Yahr Scale (OR: 3.304, 95% CI: 1.240-8.802) were significant fall predictors in this study.

Table 2: characteristics of study participants

Variable	Fallers (n=48)	Non-fallers (n=79)	p- value
Age (mean, SD) in years	67.94 (11.47)	61.65 (11.81)	.004*
Gender (n, %)			.082
Male	38 (42.69)	51 (57.30)	
Female	10 (26.31)	28 (73.68)	
Disease duration in years (mean, SD)	7.48 (5.57)	4.43 (3.51)	.001*
Anti-parkinsonian medications (n, %)	45(37.5)	75(62.5)	.777
Systolic blood pressure (mean, SD)	131.58 (18.37)	128.71 (16.99)	.415
Diastolic blood pressure (mean, SD)	78.56 (9.55)	79.23 (7.86)	.702
Orthostatic hypotension (n, %)	5 (10.41)	13 (16.45)	.122

*statistically significant, SD= standard deviation

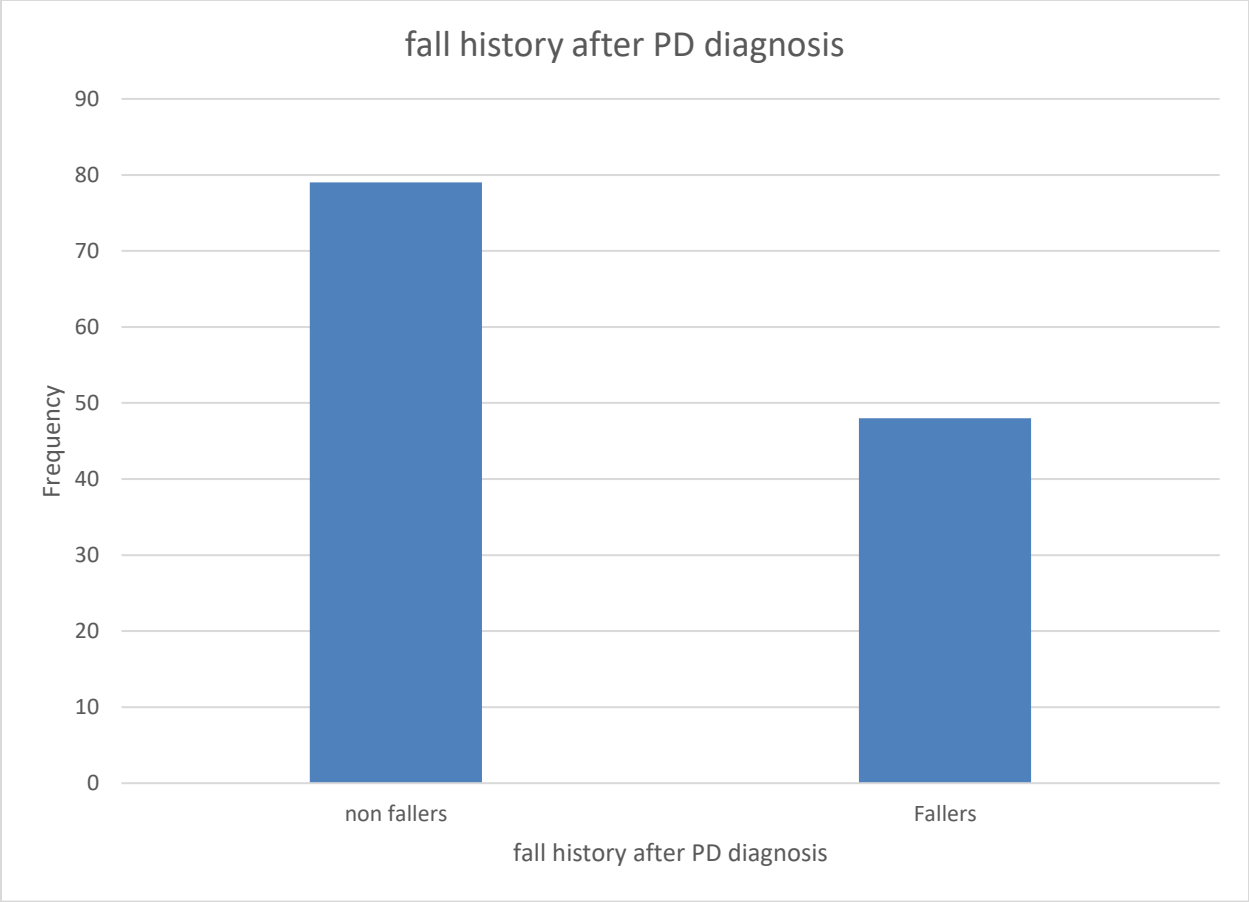


Figure 1: Fall history after PD diagnosis

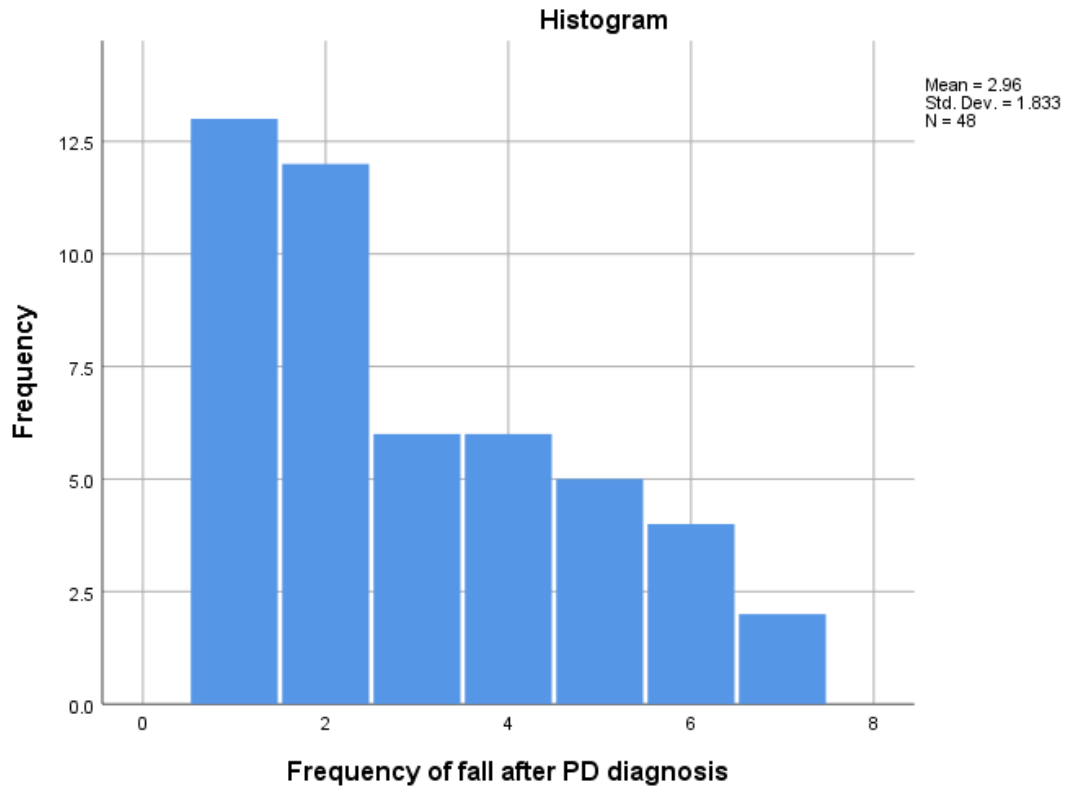


Figure 2: Frequency of falls after PD diagnosis

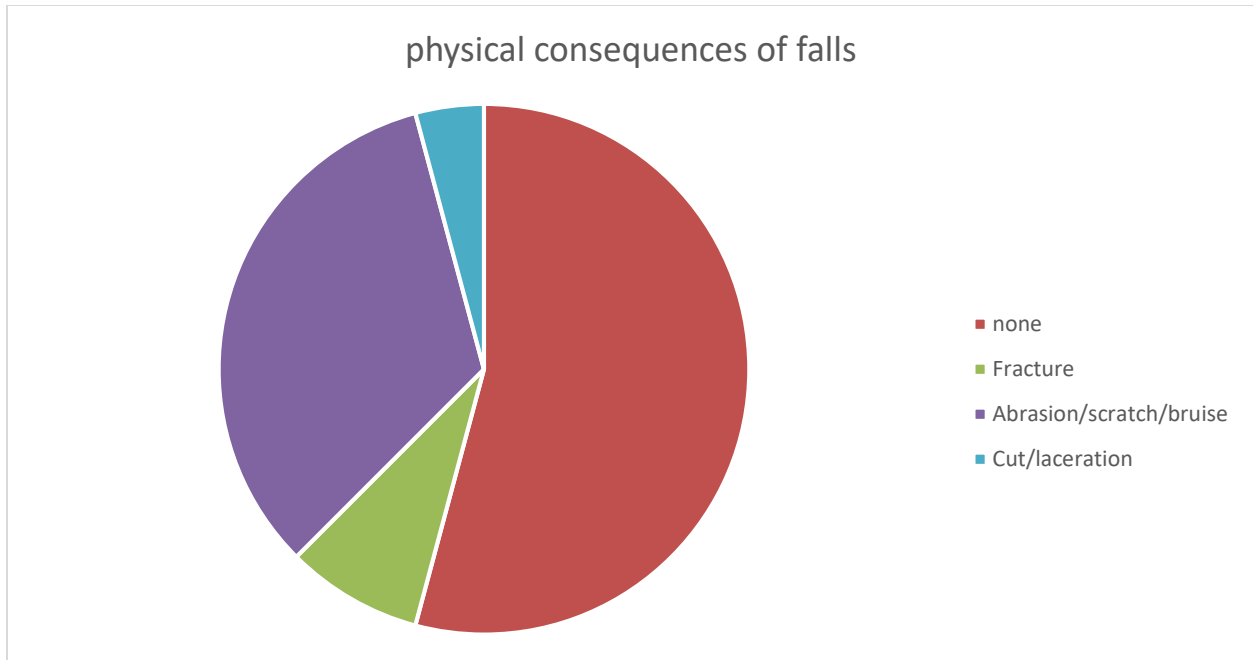


Figure 3:physical consequences of falls

Discussion:

Fall frequency

To the best of our knowledge, this is the first documentation of falls among PD patients in Ethiopia. The mean duration of disease was 5.6 years. Most of the PD patients (94%) were on one or two anti-PD drugs. 70% of the study participants were males, this may be due to the hospital-based nature of the study. The prevalence of falls was 38% (Figure 1). The frequency of falls in our study was similar to those described in previous studies in PD patients. In a study to assess the risk of falls in 160 PD patients, Contreras and Grandas documented a 38.8% prevalence, a figure with similar finding in this study. ⁽¹⁴⁾

In another study, done in Nigeria on 81 PD patients, prevalence of falls was 42%. ⁽¹³⁾

A Meta-Analysis of Six Prospective Studies of Falling in PD, among 473 PD patients also showed the prevalence of falls to be ranging from 38-50%.

Predictors of falls:

In this study, disease severity was associated with falls. Falling patients had significantly worse disease as scored with UPDRS motor subscale, and longer disease durations when compared to non-falling patients (Table 3). According to this study, drug treatment of PD, comorbid medical illnesses, orthostatic hypotension and tremor severity did not predict fall risks. There were no statistically significant differences in gender, educational level and occupation between the falling and non-falling patients.

According to this study, drug treatment of PD, comorbid medical illnesses, orthostatic hypotension and tremor severity did not predict fall risks.

However, in other global studies, these factors have significant associations with falls, which is not the case in this study mainly because

- ✓ Patients with orthostatic hypotension and other autonomic dysfunctions might be confined to bed and not addressed
- ✓ Study conducted on patients already on follow up taking antiparkinsonian drugs

Table 3: independent predictors of falls among PD patients (n=48)

	OR	95% CI	p- value
Age in years	1.029	0.018-2.517	.113
Duration of illness in years	1.231	1.026-1.476	.025
Gait	1.293	0.122-0.734	.726
Postural stability by pull test	2.130	0.643-1.384	.239
Hoehn and Yahr stage	3.304	1.240-8.802	.017

Conclusion:

This study showed significant proportion of PD patients sustained fall of whom majority occurred while patients were walking due to postural instability. The predictive risk factors of falls were disease severity and disease duration.

According to this study, 46% of PD patients who had history of falls reported physical consequences following the incidents (abrasions, cuts, and fractures).

Early detection of risk factors can prevent the untoward effects of falls in PD patients. This will facilitate tailored management to suit such patients and ultimately reduce the economic health related burden of falls in these patients.

Limitations of the study:

This study has several limitations. Being a retrospective study, there was the possibility of recall bias, and subjects with cognitive impairment may not have been accurate about fall frequency. Secondly, this was a hospital-based study, and thus, the proportion of falling patients in this study may not represent community-dwelling PD patients who are at greater risk of falls.

The generalizability of the results may also be limited by small sample size and inadequate power of the study.

Recommendations:

Routine screening of PD patients on falls at follow clinics on each visit, educating them on risks and consequences of falls.

Further prospective community-based study on prevalence and predictors of falls among PD patients in Ethiopia due the above listed limitations of this study

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Annexes:

Information sheet and consent form:

My name is _____. I am working in the research team of Graduate thesis of Addis Ababa University, College of Health Sciences, school of medicine, Department of Neurology. And I'm conducting a research on prevalence of falls and their associated risk factors in patients with PD on follow up at neurology outpatient clinics of TASH and ZMH. I would like to ask you a few questions and do targeted physical exam. The study will provide information about the burden of falls on PD patients and their care givers, that might enable the health personnel and the government to improve the overall care tailored to at risk patients. Your personal data used in the study, as detailed in the information sheet will be handled in a strictly confidential way. It will take about 15 minutes of your time for interview and physical exam. I request you to answer as truthfully as possible. Your willingness and participation in the study is very helpful in identifying the problem related to the issue. There is no payment in participating in the research. You have a right to withdraw at any time you want without any repercussion.

So do you agree to participate in this study? Yes/No

Thank you in advance for your cooperation.

Data collectors Name _____ sign: _____

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Dr. Teklil Hagos (MD, Assistant Professor of Neurology)

Questionnaire:

Part one: Socio demographic data

1. Age (years)_____
2. Sex (male/female) _____
3. Occupation_____
4. Marital status:
 1. Single
 2. Married
 3. Divorced
 4. Widowed

5. Educational status:
 1. Can't read and write
 2. Primary school level
 3. Secondary school level
 4. College level and above

Part two: clinical data

6. Age at onset of the illness_____
7. Duration of illness_____
8. Are you on antiparkinsonian drug? 1. Yes 2. No
9. If yes to question #8, for how long have you been taking the drug? _____
10. Which drug are you taking now? And how much?
 1. levodopa/carbidopa (dose_____)
 2. trihexyphenidyl (dose_____)
 3. Amantadine (dose_____)
 4. Pramipexole (dose_____)
 5. Other(specify)_____

11. Do you have other comorbid medical illness other than PD?

1. Yes
2. No

12. If yes for question #11, which comorbidity?

1. Hypertension
2. Diabetes
3. Heart failure
4. Stroke
5. Kidney failure
6. Other(specify)_____

13. Have you ever fall after you were diagnosed with PD?

1. Yes
2. No

14. If yes to question # 13, how many times do you ever fall? _____

15. When was your last fall? _____

16. Did you lose your consciousness before or during your falling incident?

1. Yes
2. No

17. What were you doing before your last fall?

1. Walking
2. Domestic activity
3. Walking down stairs
4. Taking a shower
5. Climbing stairs
6. Other(specify)_____

18. If you ever fall, what was the Circumstance of your last fall?

1. Felt weak/dizzy
2. Twisted the ankle
3. Stumbled /Slipped
4. Lost balance

5. Does not know/does not remember
6. Other(specify)_____

19. Did you suffer consequences due to the fall?

1. Yes
2. No

20. If yes for question #19, what was the consequence?

1. Fracture
2. Sprain
3. Abrasion/scratch
4. Bruise
5. Cut
6. Other (specify)_____

Part three: physical examination

21. BP measurement:Supine____/____ sitting____/____

22. Tremor at rest (head, upper and lower extremities)

0 = Absent.

1 = Slight and infrequently present.

2 = Mild in amplitude and persistent. Or moderate in amplitude, but only intermittently present.

3 = Moderate in amplitude and present most of the time.

4 = Marked in amplitude and present most of the time.

23. Posture

0 = Normal erect.

1 = Not quite erect, slightly stooped posture; could be normal for older person.

2 = Moderately stooped posture, definitely abnormal; can be slightly leaning to one side.

3 = Severely stooped posture with kyphosis; can be moderately leaning to one side.

4 = Marked flexion with extreme abnormality of posture.

24. Gait

0 = Normal.

1 = Walks slowly, may shuffle with short steps, but no festination (hastening steps) or propulsion.

2 = Walks with difficulty, but requires little or no assistance; may have some festination, short steps, or propulsion.

3 = Severe disturbance of gait, requiring assistance.

4 = cannot walk at all, even with assistance.

25. Postural Stability (Response to sudden, strong posterior displacement produced by pull on shoulders while patient erect with eyes open and feet slightly apart)

0 = Normal.

1 = Retropulsion, but recovers unaided.

2 = Absence of postural response; would fall if not caught by examiner. 3 = Very unstable, tends to lose balance spontaneously.

4 = Unable to stand without assistance.

ክፍል አንድ፡ የማህበረሰብ ጥናት መረጃ

1. እድሜ (ዓመት) _____
2. ጾታ (ወንድ/ሴት) _____
3. የስራ ሁኔታ _____
4. የጋብቻ ሁኔታ
 1. ያለገባ
 2. ያገባ
 3. ፍቺ የረጸመ
 4. የትዳር አጋሩን በሞት የተነጠቀ
5. የትምህርት ሁኔታ፤
 1. ማንበብ እና መጻፍ የማይችል
 2. የመጀመሪያ ደረጃ ትምህርት
 3. የሁለተኛ ደረጃ ትምህርት
 4. የኮሌጅ ትምህርት እና ከዚያ በላይ

ክፍል ሁለት የክሊኒካል መረጃዎች

6. ሕመሙ የጀመረበት እድሜ _____
7. ሕመሙ የቆየበት የጊዜ ገደብ _____
8. የፓርኪንሰን መድሃኒት በመውሰድ ላይ ነዎትን?
 1. አዎ
 2. አይደለም
9. ለተ.ቁ. 8 ምላሽ ያደረግክህ የሆነ መድሃኒት ለምን ያህል ጊዜ ሲወስዱ ቆይተዎል _____
10. አሁን እየወሰዱ ያሉት መድሃኒት ምን ድንድ? መጠኑስ
 1. ሌቨ ዶፓ / ካርቪ ዶፓ / (መጠን ----)
 2. ትራኔክሲኒዲል (መጠን -----)

3. አማንታዳይን (መጠን -----)

4. ፕራሚፔክሶል (መጠን -----)

5. ሌሎችካሉይግለጹ-----

11. ከፓርኪንሰንሌላሎሌችየጤናእክልሕመሞችአለብዎት?

1. አዎን

2. የለብኝም

12. ለተ.ቁ 11ጥያቄምላሽዎአዎንከሆነየትኛውየጤናእክልአለብዎት?

1. የደምግፊት

2. የስኳርበሽታ

3. የልብሕመም

4. ስትሮክ

5. የኩላሊትየጤናእክል

6. ሌሎችካሉይግለጹ-----

13. የፓርኪንሰንበሽታንበተመለከተየጥሕክምናእርዳታካገኙበኋላበድንገትወድቀውደውቃሉን?

1. አዎ

2. አለውቅም

14. ለተ.ቁ. 13ጥያቄምላሽዎአዎንከሆነለምንያህልጊዜወድቀውደውቀሉ? _____

15. ለመጨረሻጊዜየወደቁትመቼነው? _____

16. የመውደቅአጋጣሚበደረሰብዎትጊዜውስጥወይምከዚያበኋላእራስዎንየመሳትሁነቴታተከስቶነበርን?

1. አዎ

2. አልተከሰተም

17. ለመጨረሻጊዜሲወድቁምንእያከናወኑነበር?

1. እየተራመድኩ

2. የቤትውስጥስራዎችንእያከናወንኩ

3. ደረጃ እየወረደኩ
4. ገላጭን እየታጠብኩ
5. ደረጃ እየወጣሁ
6. ሌሎች ካሉ ይግለጹ _____

18. ወድቀው የሚያውቁ ከሆነ ለመጨረሻ ጊዜ በወደቁ በትዕቃት የነበረው ሁኔታ ምን ነበር?

1. ድካም እና ብኝታ ተሰምቶኛል
2. ቁርጭን ምጭ ሚቱን ወለምብሎኛል
3. ተደናቅፎ ወድቆ ያለሁ
4. ሚዛኔን ስጥኝ ነበር
5. የሆነውን አላውቅም/አላስታውስም
6. ሌሎች ካሉ ይግለጹ _____

19. በመውደቅ ምክንያት ያገጠምዎት አደጋ ምን ነበር?

1. አዎ
2. አላጋጠመኝም

20. ለተቁ 19ጥያቄ ምላሽ ያደረግኩ ከሆነ ያጋጠምዎት አደጋ ምን ነበር?

1. የሰውነት ስብራት
2. የጡንቻ ጉዳት
3. መጨጨር እና መቁሰል
4. የሰውነት መበለዝ
5. የአካል መቆረጥ
6. ሌሎች ካሉ ይግለጹ _____

Hoehn and Yahr scale

Stage	Hoehn and Yahr Scale	Modified Hoehn and Yahr Scale
1	Unilateral involvement only usually with minimal or no functional disability	Unilateral involvement only
1.5	-	Unilateral and axial involvement
2	Bilateral or midline involvement without impairment of balance	Bilateral involvement without impairment of balance
2.5	-	Mild bilateral disease with recovery on pull test
3	Bilateral disease: mild to moderate disability with impaired postural reflexes; physically independent	Mild to moderate bilateral disease; some postural instability; physically independent
4	Severely disabling disease; still able to walk or stand unassisted	Severe disability; still able to walk or stand unassisted
5	Confinement to bed or wheelchair unless aided	Wheelchair bound or bedridden unless aided