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FRAILTY SCREENING USING THE EDMONTON FRAIL SCALE IN OUTPATIENT GERIATRICS CLINIC

Short Running Title: Geriatrics clinic frailty screening

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ABSTRACT

Frailty is a condition where a person has reduced reserves of various organ systems, resulting in a higher risk of disability, complications and death. Frailty is also associated with poor outcomes after COVID-19 infections. It is recommended to screen for frailty and provide interventions to improve function. The Edmonton Frail Scale (EFS) is an available tool used for frailty screening. This was a retrospective review of the electronic medical records and Edmonton Frail Scales for patients attending Geriatric Medicine outpatient clinics in June and July 2020 after the first wave of the COVID-19 pandemic. There were 60 patients with median age of 82 years. Approximately two-thirds had dementia. Median EFS Score was 8 (moderate frailty). There were 15 (25%) with mild frailty, 15 (25%) with moderate frailty and 18 (30%) with severe frailty. The most frequent indicators for frailty identified by the EFS in this group were poor cognition, functional independence and their performance in the timed get up and go test. There was a high rate of frailty in patients attending Geriatric Medicine outpatient clinic after the first wave of the COVID-19 pandemic. Further effort is required to identify those who are frail and provide interventions to reduce the risk of frailty and improve resilience.

Keywords: COVID-19, frailty, geriatrics, outpatients, screening

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INTRODUCTION

Frailty is a condition where a person has reduced reserves of various organ systems, resulting in poor outcomes during stressful situations and associated with risk of disability, morbidity, treatment related complications and death [1]. The typical phenotype consists of weight loss, exhaustion, physical inactivity, slowness and weakness.

Frailty is associated with older age, with a prevalence of up to 59% in community-dwelling older people [2]. In clinical practice, it is recommended to screen for frailty and provide individually tailored interventions for identified cases to improve a person's independence, physical function and cognition [3]. Various screening tools are available for frailty screening, including the Edmonton Frail Scale (EFS), clinical frailty scale (CFS) and the Groningen Frailty Indicator [4,5].

Frail older people are at higher risk of hospitalization, severe infections and mortality from COVID-19 and also exhibit a poor response to COVID-19 vaccination [6]. For older people who recover from COVID-19 infections, there is also an associated worsening in the general health status and increased risk of frailty [7]. Thus, screening for frailty is important in older people especially after COVID-19 infections.

In Brunei, geriatric medicine services are mainly provided in Raja Isteri Pengiran Anak Saleha (RIPAS) Hospital, a 1260-bedded tertiary hospital. The patients admitted under Geriatric Medicine have a high rate of comorbidities and cognitive impairment [8].

At the start of the COVID-19 pandemic, the Geriatric Medicine inpatient and outpatient services were significantly reduced to provide COVID-19 related assessment and treatment, with a gradual introduction to phone-call follow-ups and virtual consultations [9]. During that time, aggressive public health measures including border closures, movement restrictions, enhanced surveillance with mass testing and contact tracing enabled Brunei to successfully contain the outbreak with zero local transmitted cases in May 2020 [10].

Due to concerns regarding the vulnerability of older people, Geriatric Medicine outpatient clinics were resumed quickly, with the additional introduction of the Edmonton Frail Scale (EFS). The EFS consists of questions related to general health status, functional independence, social support, medication use, nutrition, mood and continence, a clock-drawing test as a cognitive screen and a timed get up and go test for 3 metres. Scores of 0-2 (2 indicating worse outcomes) are given based on each of their

responses. The clinical characteristics of patients attending Geriatric Medicine outpatient clinics and frailty as identified by the EFS are described.

METHODS

This was a descriptive study involving retrospective review of the electronic records and the EFS forms for Geriatric Medicine outpatient clinic in RIPAS Hospital for the months of June and July 2020. Geriatric Medicine outpatient clinics were held twice weekly and all patients who attended the clinics were included. At that time, there were no community cases or local transmissions of COVID-19 infections (for 15 months before the second wave started).

Demographic information, cognitive and functional status as well as their responses to the EFS were collected. Data was entered and analysed using Microsoft Excel.

RESULTS

There were 60 patients, with a median age of 82 years (Range 68 to 98 years). Majority of the patients 43 (81.7%) were female. There were 42 (70%) Malays, 17 (28.3%) Chinese and one Indonesian patient. The main reasons for review were as follows: multiple medical issues 28 (46.7%), cognition 16 (26.7%), Parkinson's disease 7 (11.7%), falls 5 (8.3%), dizziness 2 (3.3%) and cardiac failure 2 (3.3%). In terms of mobility, most were wheelchair transfer 16 (26.7%), a quarter were independent mobility, 11 (18.3%) used a zimmer frame and 8 (13.3%) used a stick to mobilise. There were no immobile or bed-bound patients, as these are usually followed up via Geriatric Nurses home visits and virtual consultations. There were 7 (11.7%) patients with depression, and 37 (61.7%) patients with a diagnosis of dementia. Table 1 shows the baseline characteristics of the patients.

The median EFS Score was 8 (moderate frailty). In terms of frailty classification, there were 2 (3.3%) who were considered fit, 10 (16.7%) vulnerable, 15 (25%) with mild frailty, 15 (25%) with moderate frailty and 18 (30%) with severe frailty. There were 7 (11.7%) patients who were discharged from Geriatrics follow-up, while for the remaining patients, the next appointment was at 3 months for 9 (15%) patients, 4 months for 13 (21.7%), 6 months for 18 (30%) and 8 months for 13 (21.7%).

Table 2 summarises the responses to the different individual components of the EFS.

DISCUSSION

This was a descriptive study of Geriatric Medicine Outpatients after the first wave of COVID-19 infections to assess their frailty using the EFS. The patients had a median EFS of 8, indicating moderate frailty. The most frequent indicators for frailty identified by the EFS in this group were poor cognition, functional

independence and their performance in the timed get up and go test.

A study of patients admitted to a rehabilitation hospital in Italy found that 19.7% were non-frail, 66.4% were vulnerable, while 13.9% had severe frailty [11]. Another study of patients admitted under medicine at a tertiary hospital in Brazil found that 33.3% had mild frailty, 19% moderate and 42.9% with severe frailty [12]. In a study of patients referred to a frailty clinic, 39.1% were prefrail and 54.5% were frail, with more than half requiring interventions related to nutrition, physical activity and social support [13].

Another study looking at patients screened for frailty prior to emergency and elective surgery identified that 24% of the patients were frail [14]. Thus, the Geriatrics outpatient clinic which identified 80% of patients as frail through the EFS was particularly concerning as it was significantly higher in comparison to these studies from other settings, including in hospitals. It is important to note that these other studies were done prior to the COVID-19 pandemic, and the effect of the pandemic on frailty would be difficult to elucidate without comparative studies of frailty before and after the pandemic.

There are several recommendations from this study: it is important to screen for frailty in various settings and plan interventions for those individuals identified as frail. As the pandemic affected everyone, public health approaches to increase functional capacity and resilience should be considered for older people. Telemedicine or virtual consultation services should be maintained as an ongoing service as a fallback plan in case physical attendance at clinics have to be restricted again in the future [15]. Finally, further studies are required on the impact of COVID-19 infections on frailty.

The main limitation of this study is the small sample size from a single-centre. There may also be a bias towards more frail patients attending the clinic, given the general reluctance of the population to come into clinical facilities such as clinics or hospitals during the pandemic.

CONCLUSIONS:

This descriptive study of a Geriatric Medicine outpatient clinic after the first wave of the COVID-19 pandemic found a high rate of frailty. Further effort is required to identify those who are frail and provide interventions to reduce the risk of frailty and improve resilience.

Table 1: Baseline demographics, function and EFS Scores

Baseline Characteristics	N(%)
Median Age in years (Range)	82 (68 – 98)
Gender:	
Male	17 (28.3%)
Female	43 (71.7%)
Ethnicity:	
Malay	42 (70%)
Chinese	17 (28.3%)
Indonesian	1 (1.7%)
Indication for Geriatric Medicine Clinic Review:	
Multiple Medical Problems	28 (46.7%)
Cognitive Impairment	16 (26.7%)
Parkinson's disease	7 (11.7%)
Falls	5 (8.3%)
Dizziness	2 (3.3%)
Cardiac Failure	2 (3.3%)
Mobility:	
Independent	15 (25%)
Supervision	5 (8.3%)
Stick	8 (13.3%)
Assist of one	3 (5%)
Frame	11 (18.3%)
Assist of two	2 (3.3%)
Wheelchair transfer	16 (26.7%)
Diagnosis of depression	7 (11.7%)
Diagnosis of dementia	37 (61.7%)
Median Edmonton Frail Score (Range)	8 (1-10)
Frailty Subtype based on Edmonton Frail Scale:	
Fit (1-3)	2 (3.3%)
Vulnerable (4-5)	10 (16.7%)
Mild (6-7)	15 (25%)
Moderate (8-9)	15 (25%)
Severe (10+)	18 (30%)

Table 2: Responses to individual components of the EFS

Questions on Edmonton Frail Scale	A = 0	B = 1	C = 2
1. Cognition (Clock Drawing Test)	3 (5%)	8 (13.3%)	49 (81.7%)
2a. Admissions to hospital in a year	35 (58.3%)	22 (36.7%)	3 (5%)
2b. Self-description of health	23 (38.3%)	31 (51.7%)	6 (10%)
3. Functional Independence	6 (10%)	12 (20%)	42 (70%)
4. Social Support	56 (93.3%)	3 (5%)	1 (1.7%)
5a. Polypharmacy	22 (36.7%)	38 (63.3%)	-
5b. Forgets to take medications	36 (60%)	24 (40%)	-
6. Weight loss	40 (66.7%)	20 (33.3%)	-
7. Sad or depression	40 (66.7%)	20 (33.3%)	-
8. Urinary incontinence	40 (66.7%)	20 (33.3%)	-
9. Timed Get Up & Go Test	18 (30%)	12 (20%)	30 (50%)

Note: For questions 5 to 8, there is no option for selecting C = 2 as a response

REFERENCES:

1. Strandberg TE, Pitkala KH, Tilvis RS. Frailty in older people. Eur Geriatr Med 2011;2(6):344-355. doi.org/10.1016/j.eurger.2011.08.003
2. Rohrmann S. Epidemiology of frailty in older people. In: Veronese N, editor. Frailty and cardiovascular diseases. Advances in experimental medicine and biology, vol 1216. Cham: Springer; 2020. //doi.org/10.1007/978-3-030-33330-0_3
3. Dent E, Martin FC, Bergman H, Woo J, Romero-Ortuno R, Walston JD. Management of frailty: opportunities, challenges, and future directions. Lancet 2019;394(10206):1376-1386. https://doi.org/10.1016/S0140-6736(19)31785-4
4. Dent E, Kowal P, Hoogendijk EO. Frailty measurement in research and clinical practice: a review. Eur Journal of Int Med 2016;31:3-19. https://doi.org/10.1016/j.ejim.2016.03.0
5. Poh AWY, Teo SP. Utility of frailty screening tools in older surgical patients. Ann Geriatr Med Res 2020;24(2):75-82. https://doi.org/10.4235/agmr.20.0023
6. Hussien H, Nastasa A, Apetrii M, Nistor I, Petrovic M, Covic A. Different aspects of frailty and COVID-19: points to consider in the current pandemic and future ones. BMC Geriatr2021;21:389. //doi.org/10.1186/s12877-021-02316-5
7. Konig M, Gollasch M, Komleva Y. Frailty after COVID-19: the wave after. Aging Med 2023;6(3):307-316. https://doi.org/10.1002/agm2.12258
8. Teo SP. Geriatrics inpatients in RIPAS hospital, Brunei: patient characteristics and rehabilitation needs. J Clin Gerontol Geriatr 2018;9(2):52-58. https://doi.org/10.24816/jcgg.2018.v9i2
9. Lim YH, Teo SP. Geriatrics services in hospital and the community during the COVID-19 pandemic – Brunei experience. Pac J Med Sci 2023;24(1):23-31.
10. Ang WS, Law JWF, Letchumanan V, Ong YZ, Kumari Y, Ming LC, Tan LTH. COVID-19 pandemic in Brunei Darussalam. Prog Microbes Mol Biol 2023;6(1):a0000326. https://doi.org/10.36877/pmmb.000032
11. Erna S, Francis MD, Bologna C, Moncaglieri F, Riva A, Morazzoni P, Allegrini P, Isu A, Vigo B, Guerriero F,

Rondanelli M. Performance of Edmonton Frail Scale on frailty assessment: its association with multi-dimensional geriatric conditions assessed with specific screening tools. BMC Geriatr 2017;17:2. https://doi.org/10.1186/s12877-016-0382-3

12. Storti LB, Fabricio-Whebe SCC, Kusumota L, Rodrigues RAP, Marques S. Frailty of elderly patients admitted to the medical clinic of an emergency unit at a general tertiary hospital. Text Context Nurs 2013;22(2):452-459. https://doi.org/10.1590/S0104-07072013000200022

13. Tavassoli N, Guyonnet S, Van Kan GA, Sourdet S, Krams T, Soto ME, Subra J, Chicoulaa B, Ghisolfi A, Balardy L, Cestac P, Rolland Y, Andrieu S, Nourhashemi F, Oustric S, Cesari M, Vellas B. Description of 1108 older patients referred by their physician to the 'Geriatric Frailty Clinic (G.F.C) for assessment of frailty and prevention of disability' at the gerontopole. J Nutr Health Aging 2014;18(5):457-464. https://doi.org/10.1007/s12603-014-0462-z

14. Darvall JN, Loth J, Bose T, Sabine B, De Silva A, Story DA, Lim WK. Accuracy of the clinical frailty scale for perioperative frailty screening: a prospective observational study. Can J Anaesth 2020;67(6):694-705. https://doi.org/10.1007/s12630-020-01610-

15. Teo SP. Telemedicine or virtual consultations for older adults during the COVID-19 pandemic. Asian J Gerontol Geriatr 2022;17(1):37-38. https://doi.org/10.12809/ajgg-2021-509-letter