

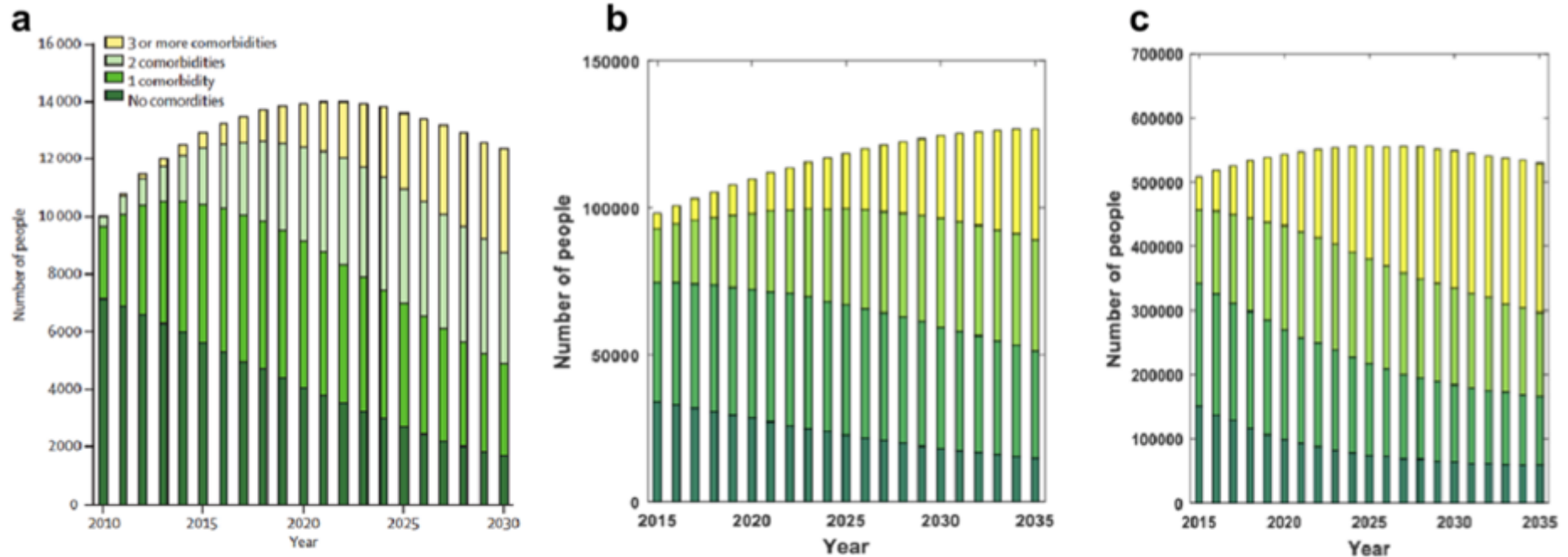
HIV & Kırılганlık

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Gümüş Tsunami:

HIV ile yaşayan kişilerde çoklu morbidite sorunu artmaktadır



Smit M et al 2015 *Future challenges for clinical care of an ageing population infected with HIV: a modelling study* Lancet Infect Dis

Smit M et al 2017 *Projections of non-communicable disease and health care costs among HIV-positive persons in Italy and the U.S.A.: a modelling study* PLoS One

Ankara HIV Renal Kohortu

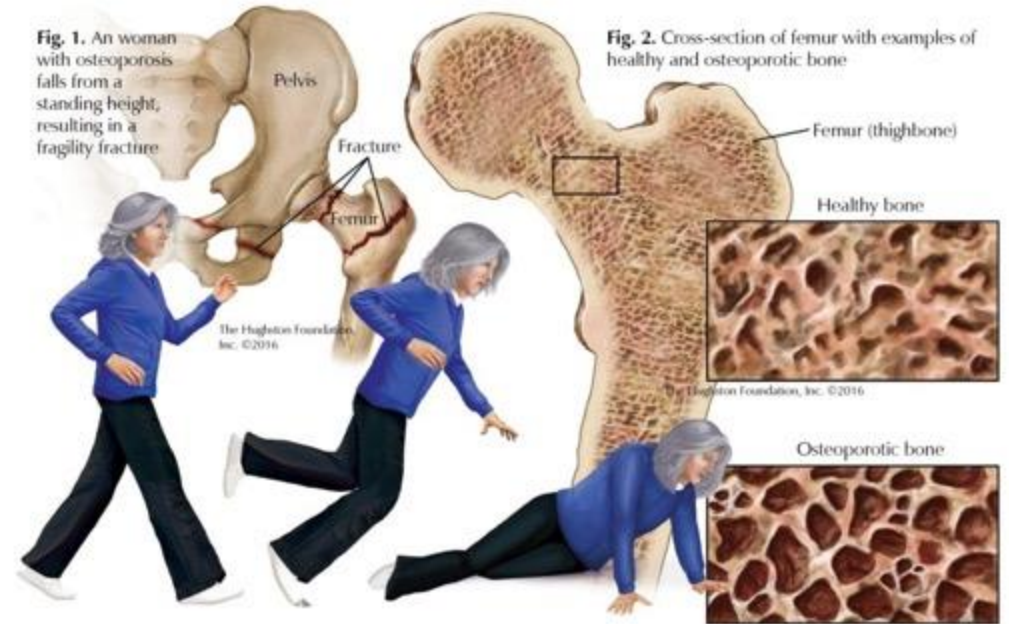
131 / 2092 her hangi böbrek hastalığı olan kişi



At least one comorbidity (at diagnosis/start of follow-up)	87 (66.4)
Diabetes mellitus	43 (33.6)
Hypertension	35 (26.9)
Coronary artery disease	25 (19.1)
HBV co-infection	5 (3.8)
HCV co-infection	-
Chronic kidney disease (at diagnosis)	16 (12.2)
End stage kidney disease (at diagnosis)	4 (3.1)
Hyperlipidemia	57 (43.5)
Cigarette	62 (47.3)
Alcohol	30 (22.9)
Drug	3 (2.3)

Eser F et al 2025 *Epidemiology of Kidney Disease in People Living with HIV in Türkiye; Comorbidities and Drug Toxicities are Emerging Problems* Curr HIV Res

Kırılğanlık ≠



Kırılganlık = Frailty

Frailty is without question one of the most serious global public health challenges we will face this coming century. The rapid expansion of the ageing population has brought a concomitant rise in the number of older adults with frailty, which in turn places an increased pressure on health-care systems worldwide.

Kırılganlık:

Üçünün olması durumudur

1



Fiziksel
Yavaşlama

2



Yorgunluk

3



Azalmış
fiziksel aktivite

4



Güçsüzlük

5



İstemsiz kilo
kaybı

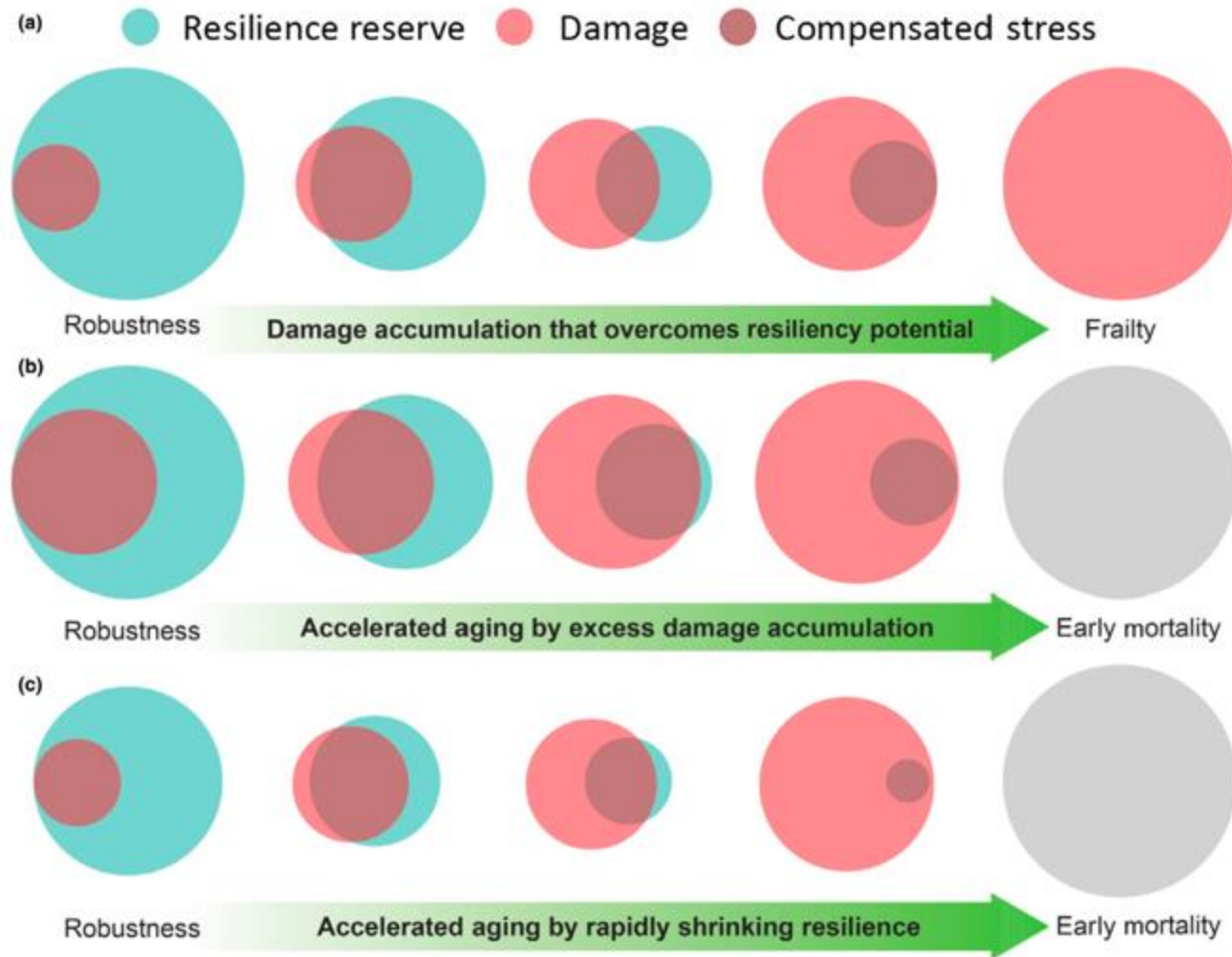
Clegg A etal 2013 *Frailty in elderly people* Lancet

Bloch M etal 2020 *Managing HIV-associated inflammation and ageing in the era of modern ART* HIV Med

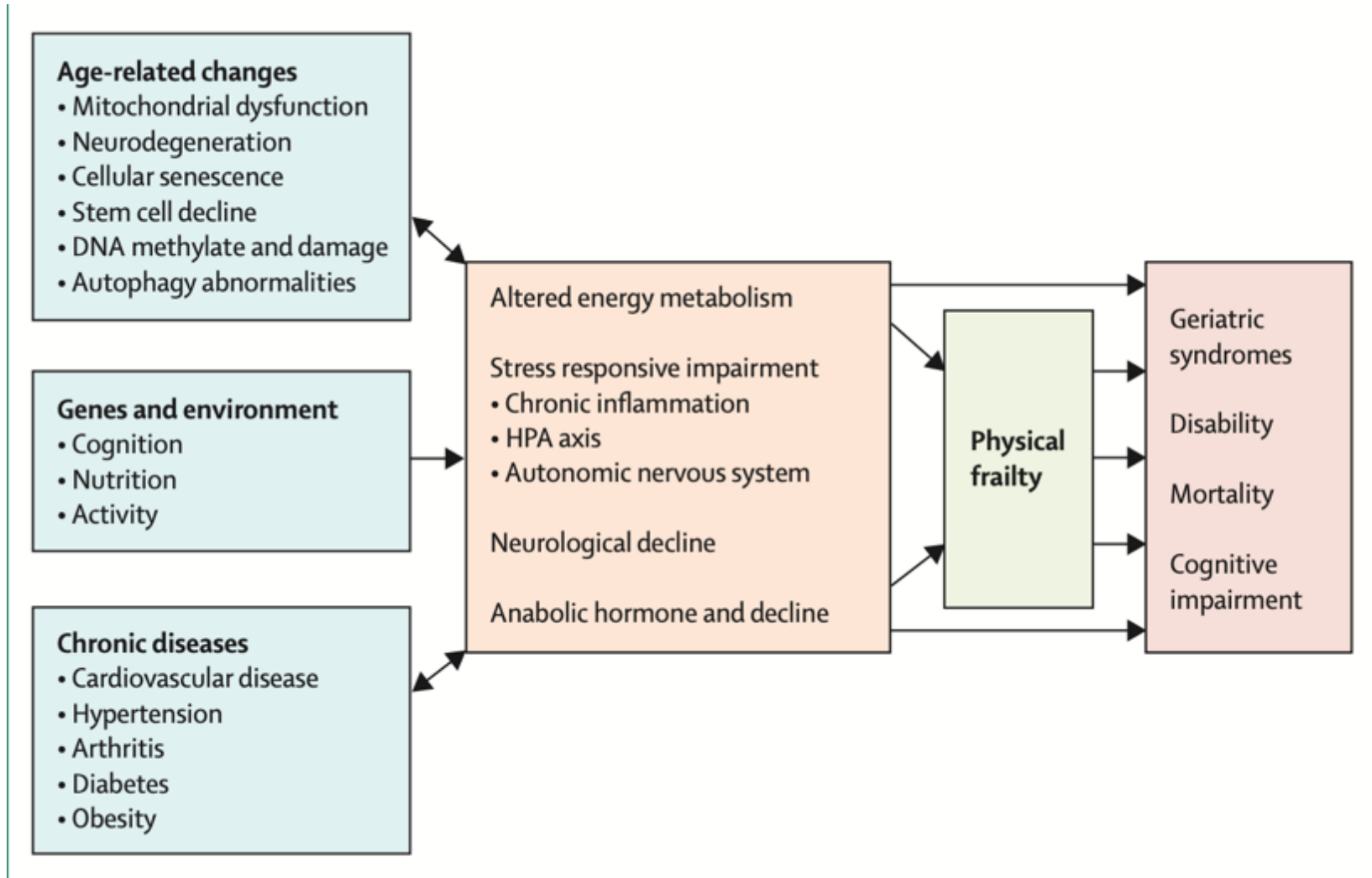
Zhabokritsky A etal 2025 *Frailty in people with HIV: a geriatric syndrome approach to aging with HIV* Curr Opin HIV AIDS

Kırılganlık

Hasara yanıt kapasitesinin azalmasıdır



Kırılganlık Patofizyoloji



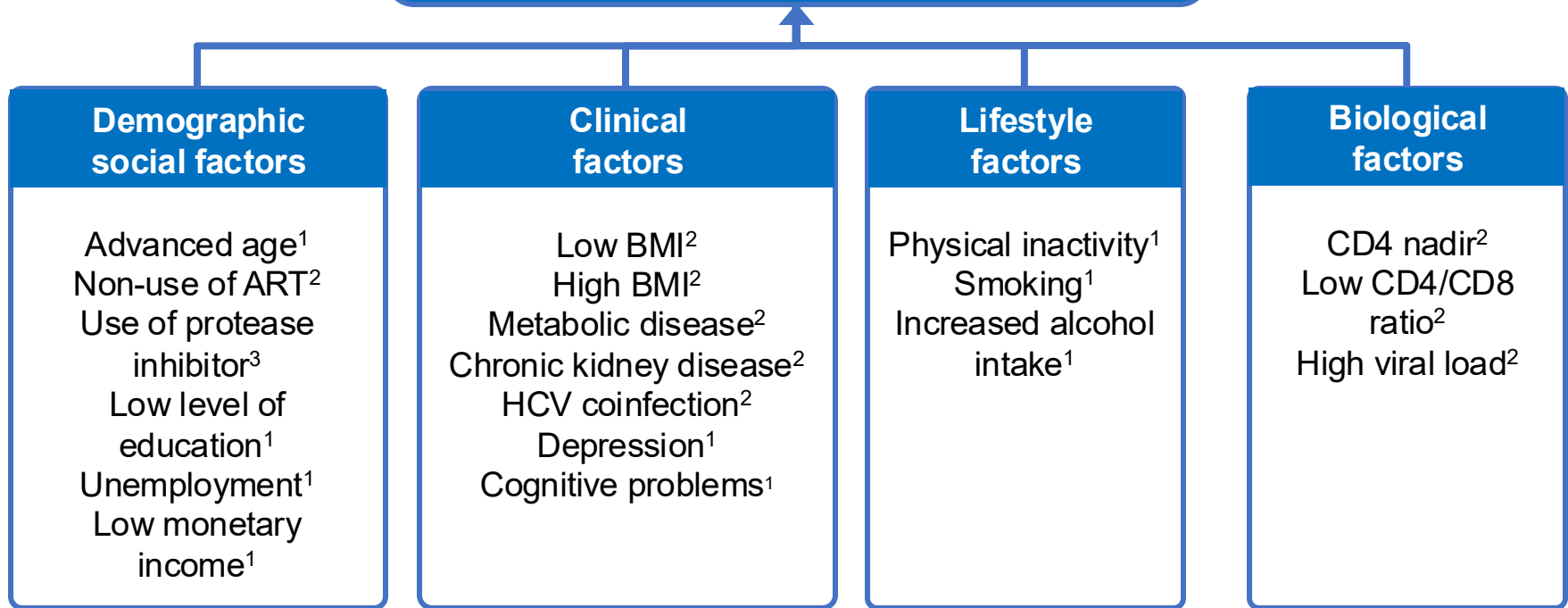
Kırılganlık

- HIV ile yaşayan bireylerde daha sık
- Ölüm riski için bağımsız risk faktörü
- AIDS'e ilerleme için bağımsız risk faktörü
- Avusturalya çalışması
 - >50 yaş erkeklerde %10.8
 - Yaşıtlarına nazaran en az 2 kat fazla
 - Düşük hayat kalitesiyle ilişkili

Althoff KN et al 2014 *Age, comorbidities, and AIDS predict a frailty phenotype in men who have sex with men* J Gerontol A Biol Sci Med Sci
Petoumenos K et al 2017 *Prevalence of self-reported comorbidities in HIV positive and HIV negative men who have sex with men over 55 years-The Australian Positive & Peers Longevity Evaluation Study* PlosOne
Bloch M et al 2020 *Managing HIV-associated inflammation and ageing in the era of modern ART* HIV Med

Kırılganlıkla İlişkili Risk Faktörleri

Frailty onset or progression



Althoff KN et al 2014 *Age, comorbidities, and AIDS predict a frailty phenotype in men who have sex with men* J Gerontol A Biol Sci Med Sci

Petoumenos K et al 2017 *Prevalence of self-reported comorbidities in HIV positive and HIV negative men who have sex with men over 55 years-The Australian Positive & Peers Longevity Evaluation Study* PlosOne

Bloch M et al 2020 *Managing HIV-associated inflammation and ageing in the era of modern ART* HIV Med

Kırılganlık Nasıl Tanımlanır?

	Components	Frailty classification	Setting		
			Primary care	Hospital	Long-term care facility
Frailty phenotype ⁸	Five items: weight loss, low physical activity, exhaustion, slowness, weakness	Frailty: ≥ 3 items; pre-frailty: 1–2 items; robust: 0 items	Yes	Yes	Yes
Frailty Index ^{21,22}	30 or more accumulated health deficits: scores range from 0 (no deficits) to 1 (all deficits)	Continuous score; suggested cutoff score for frailty $>0.25^{34}$	Yes	Yes	Yes
Electronic Frailty Index ²⁵	As for the Frailty Index, with variables derived from routine electronic health records in primary care; also considered to be a case-finding instrument	Severe frailty: score >0.36 ; frailty: score >0.24 – 0.36 ; mild frailty: score >0.12 – 0.24 ; fit: score ≤ 0.12	Yes	No	No
Clinical Frailty Scale ³⁶	Visual and written chart for frailty with nine graded pictures: 1=very fit; 9=terminally ill	Frailty: score ≥ 5	Yes	Yes	Yes
FRAIL scale ¹¹	Five items: fatigue, resistance, ambulation, illness, loss of weight	Frailty: ≥ 3 items; pre-frailty: 1–2 items; robust: 0 items	Yes	Yes	Yes
Study of Osteoporotic Fractures frailty criteria ³⁷	Three items: weight loss, exhaustion, unable to rise from a chair five times	Frailty: ≥ 2 items; pre-frailty: 1 item; robust: 0 items	Yes	Yes	No
PRISMA-7 ³⁸	Seven self-reported items: age (>85 years), male, social support, and ADLs	Frailty: score ≥ 3	Yes	No	No
Tilburg Frailty Indicator ³⁹	15 self-reported items in three domains: physical, psychological, and social	Frailty: score ≥ 5	Yes	No	No
Geriatric 8 frailty questionnaire for oncology (G8) ⁴⁰	Eight items: function (ADL and IADL), mobility, nutrition, comorbidity, cognition, depression, social support	Frailty: score ≤ 14	No	Yes	No
Groningen Frailty Indicator ⁴¹	15 self-reported items in four domains: physical, cognitive, social, psychological	Frailty: score ≥ 4	Yes	No	No
Short Physical Performance Battery ⁴²	Three measured items: gait speed, standing balance, and repeated chair stands; each item scored from 0–4, maximum score of 12	Frailty: score ≤ 9	Yes	No	No
Edmonton Frailty Scale ⁴³	Nine items: cognition, health (2 $\times$), hospitalisation, social support, nutrition, mood, function, continence	Frailty: score ≥ 7	No	Yes	No
Multidimensional Prognostic Index ⁴⁴	Eight items: comorbidity, nutrition, cognition, polypharmacy, pressure sore risk, living status, ADL, IADL	Frailty: score >0.66 ; pre-frailty: score 0.34 – 0.66 ; robust: score <0.34	Yes	Yes	No
Kihon Checklist ⁴⁵	25 dichotomous items in seven categories: physical strength, nutrition, eating, socialisation, memory, mood, and lifestyle; scoring as per the Frailty Index	Continuous score; suggested frailty cutoff score >0.25	Yes	Yes	No
Frailty Risk Score ⁴⁶	Formula: age (per 10 years) $\times 4$ + male sex $\times 10$ + no partner $\times 5$ + body mass index <18.5 kg/m ² $\times 12$ + cardiovascular disease $\times 4$ + diabetes $\times 4$ + number of drugs $\geq 2 \times 5$, EMS $<20 \times 5$ + ADL motor deficit $\times 4$ + ADL process deficit $\times 7$. Also considered to be a case finding instrument.	Very good: score <45 ; good: score 45 – 50 ; moderate: score 51 – 55 ; poor: score 56 – 61 ; very poor: score >61	No	Yes	No
Hospital Frailty Risk Score ⁴⁷	109 summed items from ICD-10 frailty-relevant codes from administrative hospital data. Also considered to be a case finding instrument.	Low risk: score <5 ; intermediate risk: score 5 – 15 ; high risk: score >15	No	Yes	No

Dent E et al 2019 *Management of frailty: opportunities, challenges, and future directions* Lancet

Kırılganlık Tanımlama

- Fried Frailty Phenotype (FFP),
 - İstemsiz kilo kaybı
 - Tükenmişlik
 - Fiziksel düşkünlük
 - Düşük yürüme hızı
 - El kavrama gücü azalması
- Bilişsel ve psikososyal kısımları ölçmez

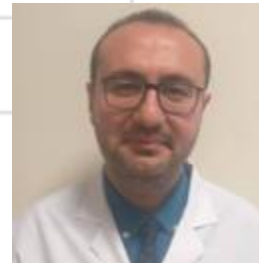
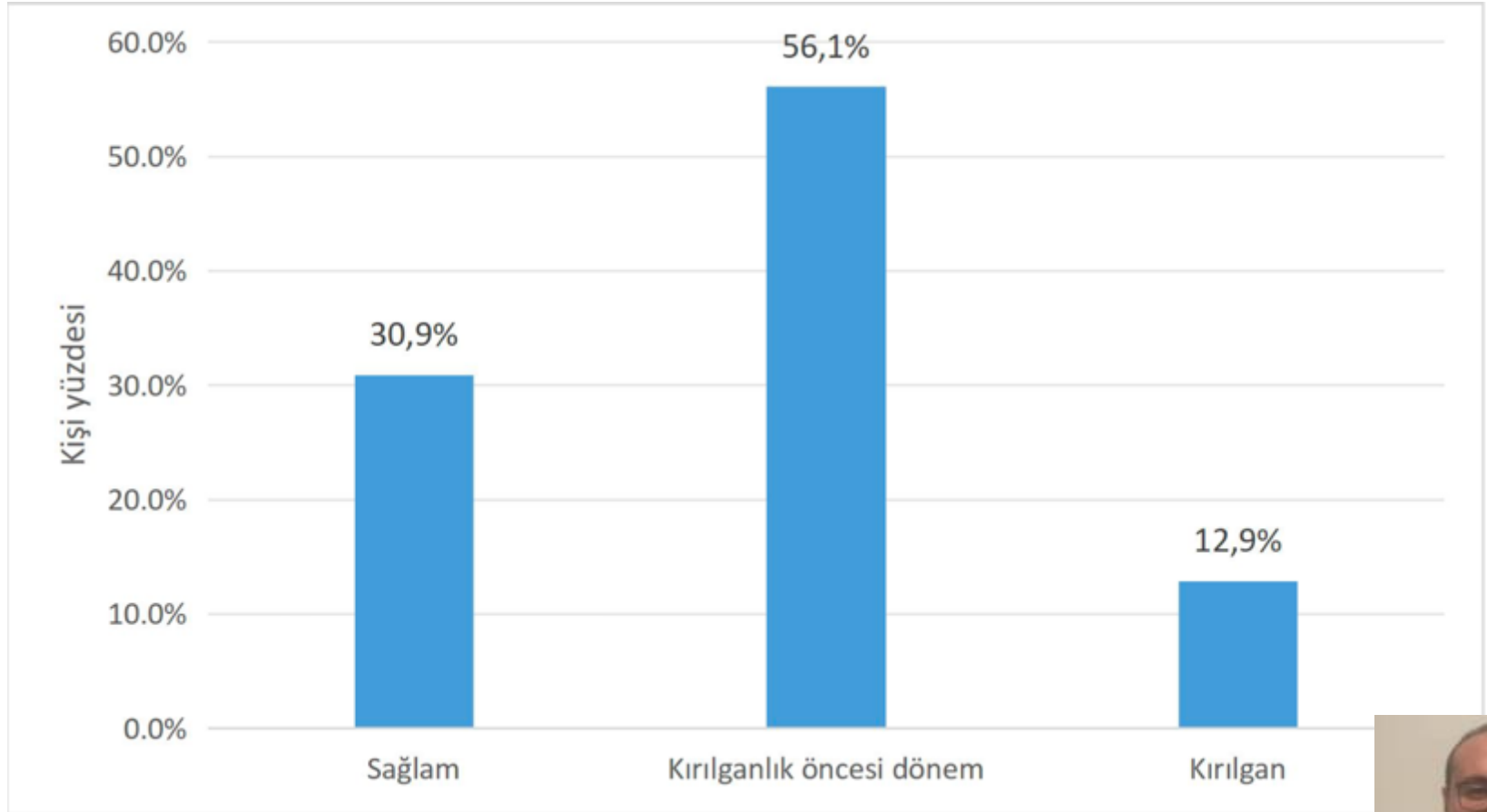
Kırılganlık: *Hacettepe*



	Non-frail (n = 59)	Pre-frail (n = 30)	Frail (n = 11)	pValue
Age (years)	48.56 ± 6.80	52.87 ± 8.59	59.91 ± 8.17	<0.001
Sex				
Female	10 (17)	7 (23.3)	4 (36.3)	0.362
Male	49 (83)	23 (76.7)	7 (63.7)	
Height (cm)	171.72 ± 8.08	169.20 ± 8.12	165.64 ± 6.59	0.050
Weight (kg)	80.82 ± 13.0	77.5 ± 9.35	74.18 ± 10.56	0.159
BMI (kg/m ²)	27.58 ± 4.18	26.7 ± 3.52	27.6 ± 4.95	0.658
Waist circumference (cm)	96.68 ± 11.55	98.30 ± 12.32	96 ± 7.32	0.776
Hip circumference (cm)	103 (69–119)	103 (83–120)	102 (92–120)	0.732
Smoking (package/year)	26.33 ± 10.30	20.15 ± 9.57	38.00 ± 10.36	<0.05
Alcohol use (g/week)	31 (10–600)	10 (20–60)	3 (20–60)	0.995
CDC (%)	A (66.7)	A (60.8)	A (90.9)	0.442
	B (14.0)	B (16.7)	B (0.0)	
	C (19.3)	C (23.3)	C (9.1)	
Treatment duration (months)	5 (6–26)	4 (6–20)	3 (6–19)	
PI treatment	26 (44)	14 (46.7)	11 (45.4)	0.841
PI treatment duration	60 (12–180)	36 (12–156)	132 (72–228)	<0.05
CRP	0.32 (0.10–0.97)	0.33 (0.10–1.4)	0.42 (0.29–6.7)	<0.05
HbA1c (%)	5.4 (4.6–8.8)	5.7 (4.7–12.5)	6.5 (5.5–7.8)	<0.05

Houssein M etal 2022 *Frailty and sarcopenia among Turkish people aged 40 and above living with HIV* HIV Med

Kırılganlık: *Tepecik*



Kırılganlık: *Hacettepe*

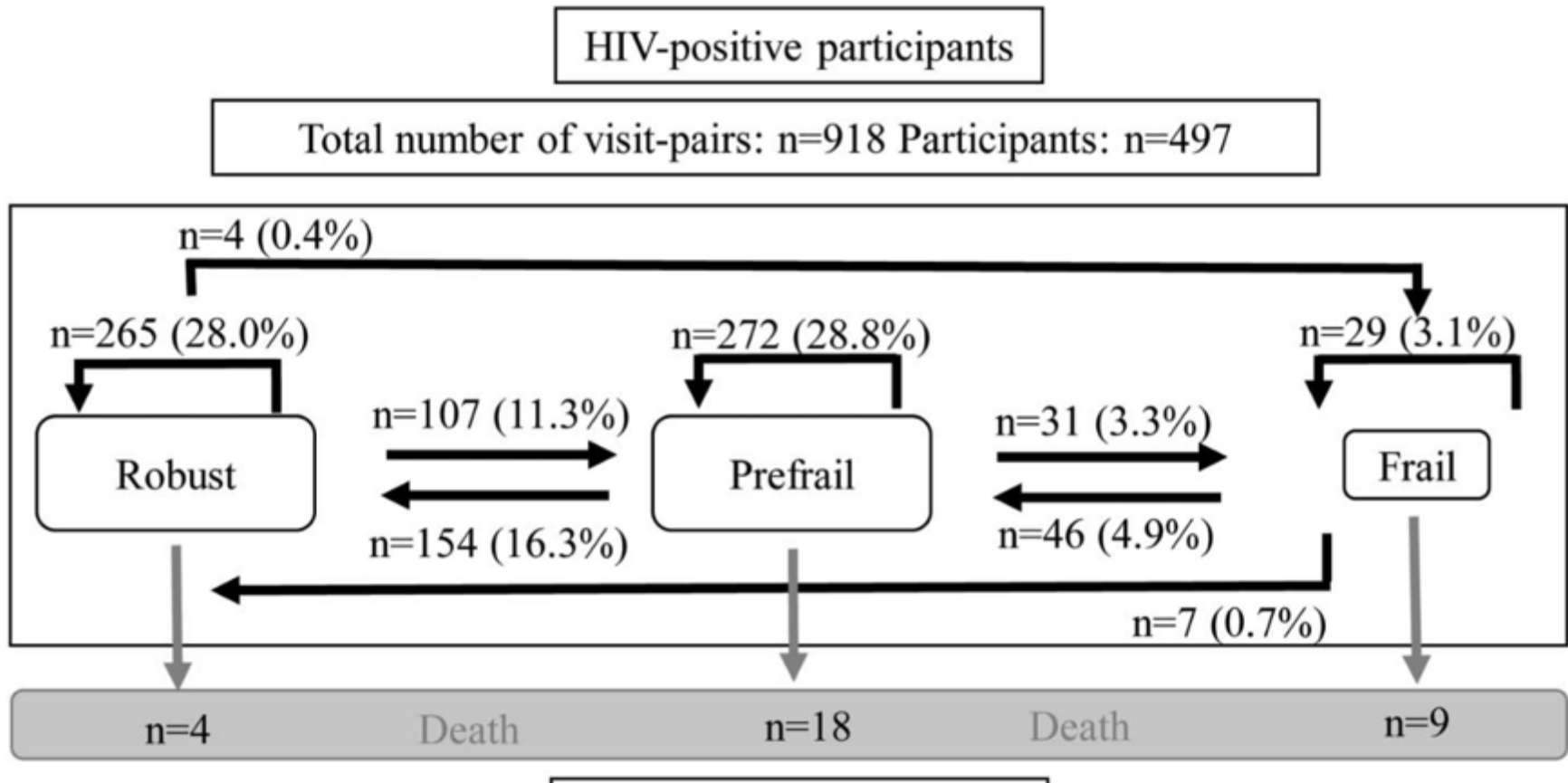


n = 100	Non-frail (n = 59)	Pre-frail (n = 30)	Frail (n = 11)	pValue
Presence of a comorbidity	28 (47.4)	23 (76.7)	9 (81.8)	<0.05
Number of comorbidities	0 (0–3)	1.5 (0–3)	2 (0–3)	<0.001
Diabetes mellitus	6 (10.1)	6 (20.0)	6 (54.5)	<0.05
Coronary artery disease	5 (8.4)	10 (33.3)	3 (27.3)	<0.05
Hypertension	7 (11.8)	10 (33.3)	5 (45.5)	<0.05
Osteoporosis	1 (1.7)	3 (10)	1 (9.2)	0.055
Chronic renal failure	3 (5.1)	2 (6.7)	1 (9.2)	0.879
CCI	7 (6–10)	8 (6–11)	9 (8–12)	<0.001
VACS (%)	6 (0–39)	12 (0–40)	18 (6–49)	<0.05
5-year mortality risk (%)	2.8 (1.8–18)	4.2 (1.8–18.8)	6.2 (2.8–26.4)	<0.05

Houssein M et al 2022 *Frailty and sarcopenia among Turkish people aged 40 and above living with HIV*
HIV Med

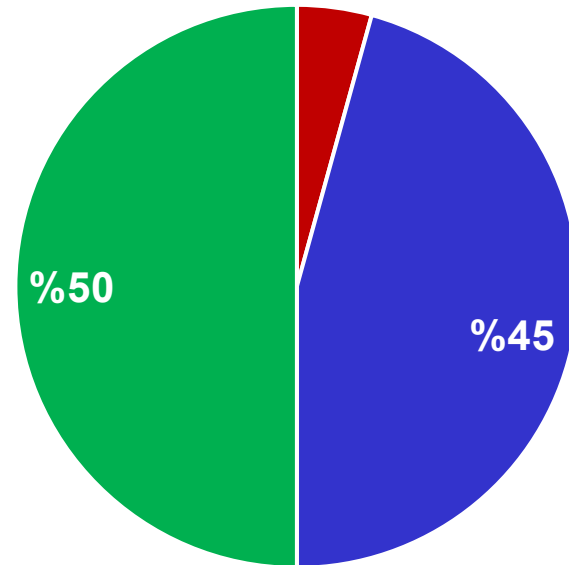
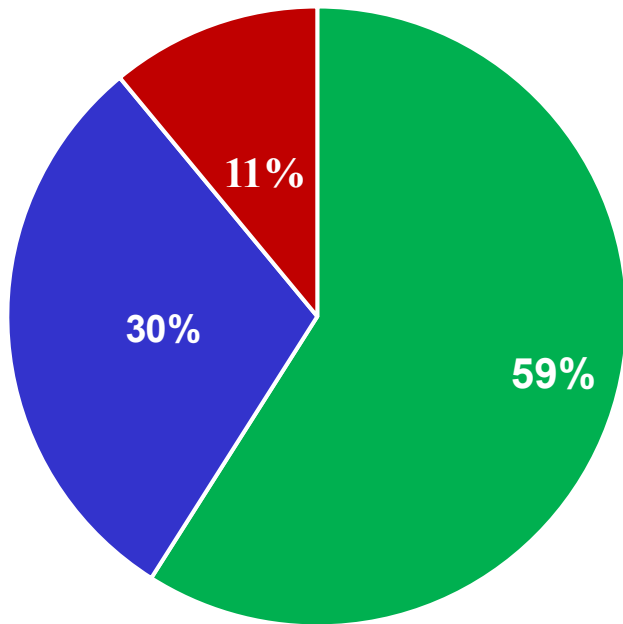
Kırılganlık

Dinamik bir süreçtir



Verheij E et al 2021 *Frequency, Risk Factors, and Mediators of Frailty Transitions During Long-Term Follow-Up Among People With HIV and HIV-Negative AGEHIV Cohort Participants*. J Acquir Immune Defic Syndr

Hacettepe Deneyimi 2018 vs 2020



■ Kırılğan ■ Pre Kırılğan ■ Kırılğan değil

Houssein M et al 2022 *Frailty and sarcopenia among Turkish people aged 40 and above living with HIV*
HIV Med
Altunay H et al *The Role of Oxidative Stress Markers in Predicting Frailty in HIV-Infected Individuals*
IAS2021

Kırılganlık ve Biyobelirteçler

Authors	Biomarkers	Key findings
Johnston <i>et al.</i> [47 [■]]	Urinary cfmtDNA	Patients with sarcopenia had higher levels suggesting inflammatory dysregulation, which could infer frailty
Sun <i>et al.</i> [48]	Serum cfmtDNA and cfgDNA	People living with HIV had lower serum cfmtDNA. They also had lower serum cfgDNA, which was significantly associated with frailty
Erlandson <i>et al.</i> [49 [■]]	Serum cfmtDNA	Haplogroup H of cfmtDNA was associated with frailty in white people but not black or Hispanic people so has limited use as a potential biomarker at population level
Blanco <i>et al.</i> [50]	Serum RBP4	People with frailty had statically significant higher levels of RBP4
Shiau <i>et al.</i> [51]	EAA, EEAA, IEAA, GrimAge, PhenoAge, DNAm-TL	No associations with frailty were found. IEAA was associated with decreased cognitive function in participants with HIV
Zhang <i>et al.</i> [52]	CMV specific T cells	CMV is associated with frailty and HIV infection with evidence that low levels of CMV specific T cells predicts both the onset and maintenance of frailty
Alvarez <i>et al.</i> [53]	Serum-naive and memory T cells	Established an association between frailty, markers of immune activation and oxidative stress as participants with frailty showed a reduced number of memory T cells (both CD4+ and CD8+)
Derry <i>et al.</i> [54]	CRP, IL-6, IFN- γ , TNF- α , IL-1 β	Higher serum cytokine levels were shown to be associated with frailty as well as depression, neurocognitive impairment and worse physical function. CRP was not associated with any of these outcomes

Jones HT et al 2022 *Frailty in people living with HIV: an update* Curr Opin Infect Dis

Kırılganlıkla yaşayan kişilerde *oksidan stress belirteçleri artmıştır*



	Frail	Pre-Frail	Robust	p
TAC (nmol Trolox/ μ L) Median	0.299	0.294	0.296	0.729
MDA (nmol/mL) Median	1.26	1.32	0.91	<0.001

Yaşlı Bakımı



Kapsamlı Geriatrik Değerlendirme



	HIV Positive (n = 50)	HIV Negative (n = 52)	p
Katz Basic ADL scores, median (IQR)	6.0 [0.0]	6.0 [0.0]	0.20
Lawton Brody IADL score, median (IQR)	8.0 [0.0]	8.0 [0.0]	0.28
Living with frailty, CFS, n (%)	9 (18.0)	7 (13.5)	0.53
CFS Score, median (IQR)	3.0 [1.0]	2.0 [1.0]	0.11
Living with frailty, FFI, n (%)	10 (20.0)	10 (19.2)	0.92
FFI Score, median (IQR)	0.0 [0.0]	0.0 [0.0]	0.90
Living with frailty, FRAIL, n (%)	12 (24.0)	9 (17.3)	0.40
FRAIL score, median (IQR)	0.0 [0.0]	0.0 [0.0]	0.43
Malnutrition, n (%)	3 (6.0)	4 (7.7)	1.0
MNA-SF score, median (IQR)	14.0 [0.0]	14.0 [1.0]	0.59
HGS, kg, mean $\pm$ SD	32.7 $\pm$ 8.4	31.3 $\pm$ 9.0	0.93
Probable Sarcopenia, n (%)	5 (10.0)	6 (11.5)	0.80
4-meter walking, sec, median (IQR)	3.3 [1.3]	3.7 [1.1]	0.94
Gait speed, <0.8 m/sec, n (%)	5 (10.0)	5 (9.6)	0.95
Polypharmacy, n (%)	12 (24.0)	6 (11.5)	0.099
Drug number, median (IQR)	3.0 [2.0]	2.0 [3.0]	0.018
Qmci, score, median (IQR)	84.0 [15.5]	81.0 [17.0]	0.53

Kas Hacmi Değerlendirme



	HIV Positive (n = 50)	HIV Negative (n = 52)	p
Gastrocnemius Medialis MT., mm, mean $\pm$ SD	16.07 $\pm$ 3.8	16.04 $\pm$ 3.2	0.57
Rectus Femoris MT., mm, mean $\pm$ SD	16.75 $\pm$ 3.89	16.68 $\pm$ 4.3	0.82
Rectus Femoris CSA, mm, mean $\pm$ SD	7.85 $\pm$ 2.50	7.65 $\pm$ 2.75	0.67
Rectus Abdominis MT., mm, mean $\pm$ SD	9.38 $\pm$ 1.90	8.87 $\pm$ 2.04	0.080
External Oblique MT., mm, mean $\pm$ SD	4.40 $\pm$ 1.21	4.63 $\pm$ 1.41	0.37
Internal Oblique MT., mm, mean $\pm$ SD	6.36 $\pm$ 1.68	6.53 $\pm$ 2.20	0.40
Transverse Abdominis MT., mm, mean $\pm$ SD	4.57 $\pm$ 1.56	4.66 $\pm$ 1.46	0.81
FFMI, kg/m ² , median (IQR)	18.9 [3.3]	19.5 [5.1]	0.53
SMI, kg/m ² , mean $\pm$ SD	9.84 $\pm$ 4.11	9.03 $\pm$ 3.66	0.12
Phase Angle, median (IQR)	5.7 [3.2]	7.4 [4.0]	0.004

Şahiner Z 2025 *Phase Angle Is Lower in Older Adults Living with HIV Compared to Geriatric Outpatients: A Case-Control Study* J Clin Med

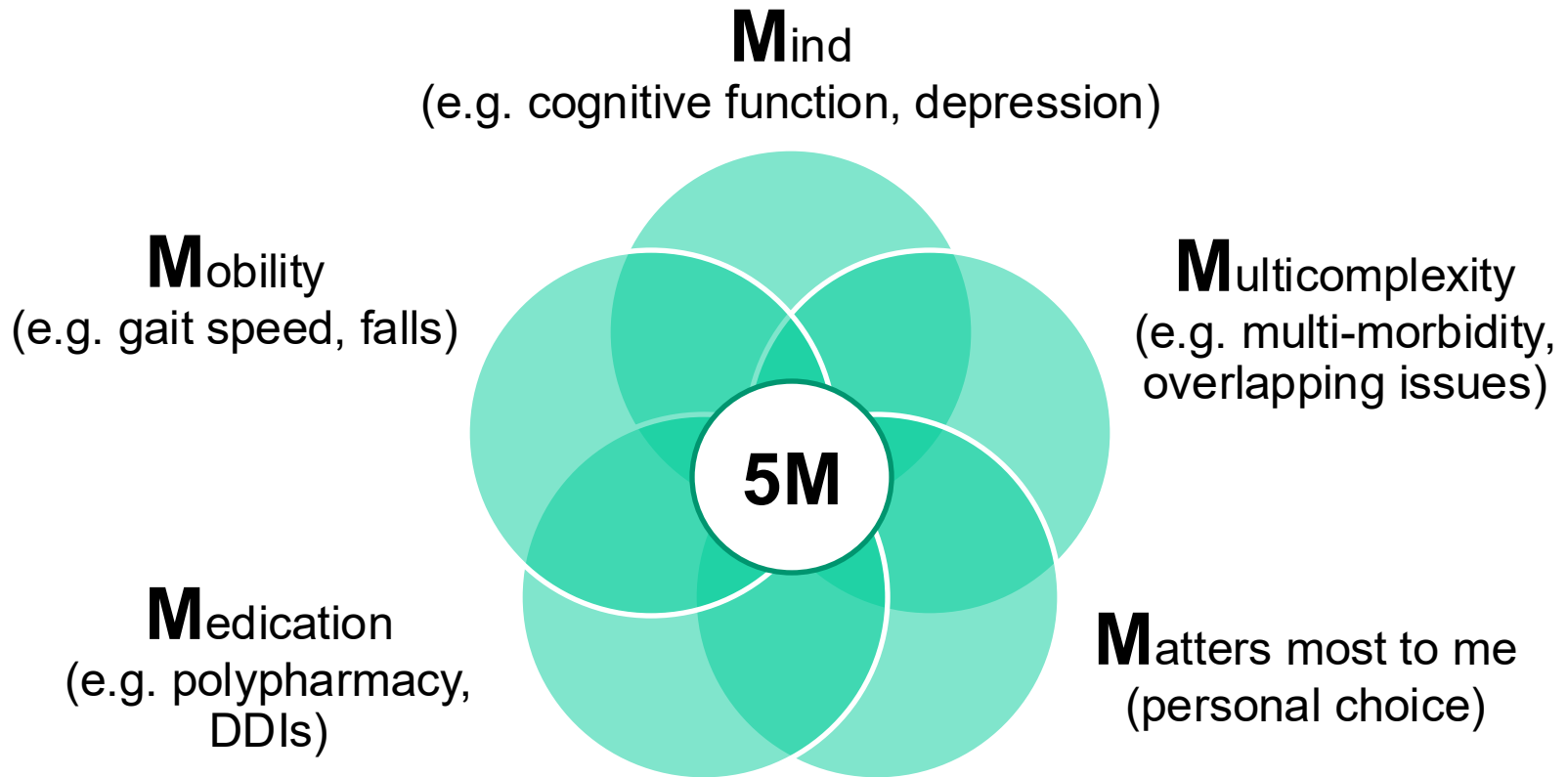
Farklı Geriatrik Takip Modelleri

Table 1. Overview of 3 Human Immunodeficiency Virus and Geriatric Care Models

Model Type	Overall Description	Institution Name	Location
Model 1: Outpatient referral/consultation	Referral to a geriatrician for recommendations to enhance a patient's care plan; HIV provider remains as primary provider	Positive Aging Consultation, University of Colorado	Aurora, Colorado
Model 2: Combined HIV/geriatric multidisciplinary clinic	A multidisciplinary team is incorporated into existing HIV/infectious disease clinics to provide a comprehensive assessment and evaluation of each patient; primary care providers are provided with full evaluation and recommendations from the multidisciplinary team	The THRIVE Program	Baltimore, Maryland
		Comprehensive HIV and Aging Initiative of the Chronic Viral Illness Service, McGill University Hospital Center	Montreal, Quebec, Canada
		Chelsea and Westminster Hospital [11]	London, United Kingdom
		Silver Clinic [12]	Brighton, United Kingdom
		Golden Compass Program, University of California; San Francisco/Zuckerberg San Francisco General Hospital [14, 16]	San Francisco, California
Model 3: Dually trained providers	An HIV provider with an invested interest in geriatric care performs assessments and provides recommendations	Center for Special Studies, New York Presbyterian/Weill Cornell Medical Center [13, 15]	New York City, New York
	Dually boarded provider: a single provider with both geriatric and HIV expertise in 1 clinical home	Age Positively Program, Massachusetts General Hospital	Boston, Massachusetts
		Penn Community Practice and Penn Geriatrics, University of Pennsylvania Medical Center	Philadelphia, Pennsylvania

Davis AJ et al 2022 *Strengths and Challenges of Various Models of Geriatric Consultation for Older Adults Living With Human Immunodeficiency Virus* Clin Infect Dis

5M Kavramı



HIV Enfeksiyonu Risk Faktörü Olmasına Rağmen

- Coraspin® alması gereken 5 hastadan 1'i alabiliyor
- Antitrombosit tedavi %5 vs %14
- Statin kullanımı %24 vs %36
- Sigara bırakmak için ilaç önerisi %19
- KMD ölçümü, İngiltere
 - %17 70 yaş üstü erkek veya 65 üstü kadın
- Zoster aşısı, sağlıklı yaşlılarına kıyasla daha az

Erlandson KM et al 2019 *HIV and Aging: Reconsidering the Approach to Management of Comorbidities*
Infect Dis Clin North Am

Molloy A et al 2017 *Routine monitoring and assessment of adults living with HIV: results of the British HIV Association (BHIVA) national audit* BMC Infect Dis

Reçeteden İlaç Çıkarma

Deprescribing



Antiretroviral ilaç yükünün azaltılması

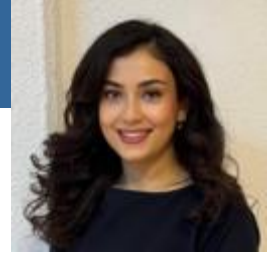
*Etkin madde sayısının azaltılması (ikili tedavilere geçiş)
Tablet/kapsül sayısının azaltılması (kombine preparat tercihi)
Uzun etkili formülasyonların tercih edilmesi*

Eş zamanlı kullanılan ilaç yükünün azaltılması

*Tedavi rejim karmaşıklığının gözden geçirilmesi
Uygunsuz ilaç kullanımının değerlendirilmesi
Antikolinergik yükün belirlenmesi
Reçeteleme kaskadının sorgulanması
Reçetesiz ürünlerin sorgulanması*

Sağlığın İyileştirilmesi: Start V2 kriterleri

Aktif Müdahale



Kriter Grubu	Kriter adı	1. görüşme (n=145)	2. görüşme (n=145)
Kardiyovasküler sistem	Sistolik kan basıncı kronik olarak >160 mmHg, diastolik kan basıncı >90 mmHg olan ya da hasta diyabetik ise sistolik kan basıncı >140 mmHg ve diastolik kan basıncı >90 mmHg olan hastalarda antihipertansif tedavisi.	9	-
	Yaşamının sonuna yaklaşmış ya da 85 yaşından büyük olmayan, öyküsünde koroner, serebral ya da periferik vasküler hastalığı olan hastalarda statin tedavisi.	3	-
Kas iskelet sistemi	Dökümanite osteoporozu olan, farmakolojik ve klinik olarak kontrendikasyonu olmayan (kırılganlık kırığı öyküsü ya da çeşitli bölgelerde kemik mineral dansitesi -2,5 altında olan) hastada kemik erimesini önleyen ya da anabolik ajanların (bifosfonat, stronsiyum renalat, teriparadit, denosumab) kullanımı.	1	-
	Osteopenik (T-skoru birden fazla bölgede >-1,0 ancak <-2,5), düşme öyküsü olan ya da evden çıkamayan 65 yaş ve üstü hastalarda D vitamini takviyesi kullanımı.	9	-
Aşılar	Yıllık grip aşısı.	110	68
	Ulusal kılavuzlara göre 65 yaşından sonra en az bir kere pnömokok aşısı.	55	16
Toplam		187	84

Sağlığın İyileştirilmesi

Aktif Müdahale



	n	50 yaş üstü HIV+		p değeri
		1. görüşme	2. görüşme	
LDL (mg/dl), ortalama $\pm$ SS	132	135,2 (34,55)	126,2 (34,43)	0,003
Total kolesterol (mg/dl), ortalama $\pm$ SS	132	205,5 (47,16)	192,5 (46,6)	0,001
Kreatin (mg/dl), ortanca (ÇAD)	132	0,98 (0,27)	0,98 (0,25)	0,963
HbA1c (%), ortanca (ÇAD)	126	5,8 (0,8)	5,7 (0,7)	0,004
CD4+ T lenfosit sayısı (hücre/mm ³), ortanca (ÇAD)	131	536 (400)	542 (387)	0,003
CD4/CD8 oranı, ortanca (ÇAD)	131	0,8 (0,64)	0,7 (0,58)	0,737



Kırılganlık: *Tepecik Biyopsikososyal*

	Fried			Test İstatistikleri	
	Sağlam	Pre-frail	Kırılgan	Test değeri	<i>p</i> değeri
BETY toplam	15 (15) ^a	30 (29) ^b	68,5 (36) ^c	39,309	<0,001 ‡
BETY ağrı	3 (6) ^a	5 (9) ^b	13 (9) ^c	24,408	<0,001 ‡
BETY fonksiyonellik ve yorgunluk	3 (5) ^a	6 (10) ^b	24 (18) ^c	38,590	<0,001 ‡
BETY emosyonel	5 (7) ^a	8,5 (9) ^b	19,5 (12) ^c	22,395	<0,001 ‡
BETY sosyal katılım	1 (3) ^a	2,5 (5) ^b	7 (10) ^b	17,068	<0,001 ‡
BETY cinsellik	0 (4) ^a	3 (6) ^a	8 (1) ^b	21,320	<0,001 ‡
BETY uyku	0 (3) ^a	2 (4) ^b	4 (2) ^c	13,877	<0,001 ‡



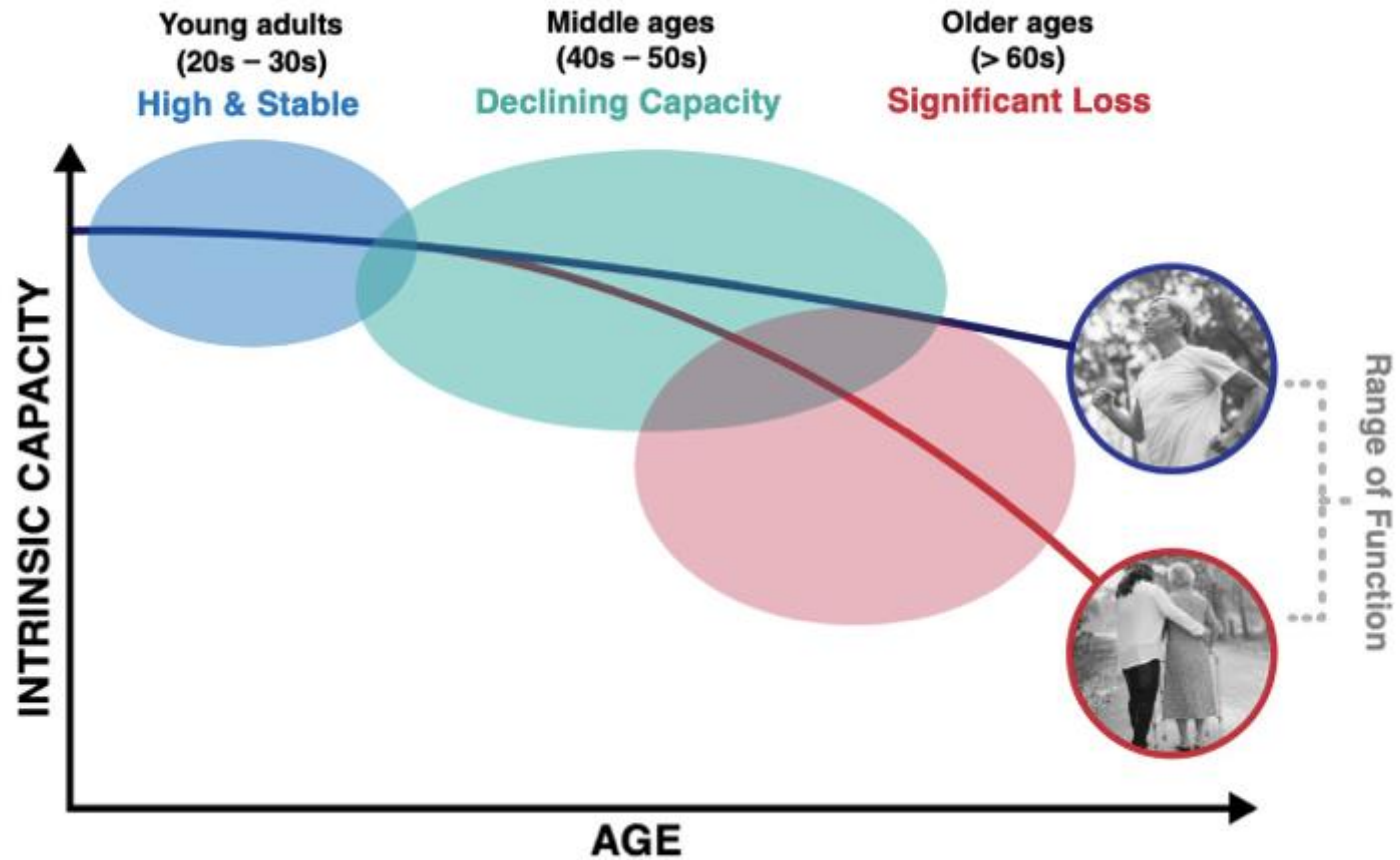
Hayat Kalitesinin İyileştirilmesi

Aktif Müdahale



Ortanca (ÇAD)	50 yaş üstü HIV+ (n=145)			50 yaş üstü HIV- (n=70)		50 yaş altı HIV+ (n=70)	
	1. görüşme	2. görüşme	p değeri	1. görüşme	p* değeri	1. görüşme	p** değeri
Fiziksel fonksiyon	90 (20)	90 (15)	<0,001	80 (20)	0,022	100 (10)	<0,001
Fiziksel rol güçlüğü	100 (37,5)	100 (25)	<0,001	100 (25)	0,895	100 (31,25)	0,162
Genel sağlık algısı	70 (32,5)	80 (25)	<0,001	70 (26,2)	0,281	57,5 (35)	0,002
Genel ağrı	90 (22,5)	90 (22,5)	<0,001	80 (32,5)	0,003	90 (32,5)	0,339
Fiziksel komponent özeti	50,8 (11,3)	50,9 (7,5)	0,012	48,9 (8,7)	0,101	50,8 (7,6)	0,239
Sosyal fonksiyon	100 (25)	100 (12,5)	<0,001	100 (0)	0,009	81,25 (50)	0,002
Emosyonel rol güçlüğü	100 (33,3)	100 (33,3)	<0,001	100 (33,3)	0,188	100 (66,7)	0,026
Vitalite (canlılık)	70 (30)	75 (25)	<0,001	60 (21,2)	0,021	60 (35)	0,004
Mental sağlık	76 (24)	80 (20)	<0,001	72 (16)	0,386	68 (32)	0,005
Mental komponent özeti	49,8 (20,3)	53,5 (14,9)	<0,001	48,7 (16,8)	0,563	40,2 (29,1)	0,001

Özet





Teşekkür

