Food Insecurity is Associated with increased Frailty Prevalence among People with HIV

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KEY FINDINGS

- **Food insecurity, frailty, and prefrailty were common among PWH.**
- **Food insecurity may be an important health issue to address to prevent longer-term health problems.**
- **Food insecurity was associated with an increased odds of frailty.**

BACKGROUND

- Food insecurity in the United States (US) is increasing
  - ~13.5% of US households reported food insecurity
  - ≥25% of people with HIV (PWH) may be food insecure
- Food insecurity has been associated with lack of viral suppression, lower, less optimal antiretroviral adherence and lower CD4 counts
- As PWH age it is important to understand the impact on longer-term outcomes, such as frailty

METHODS

- Associations between food insecurity and frailty were examined in 2 cohorts:
  - CFAR Network of Integrated Clinical Systems (CNICS) – clinical cohort (2023-2025
  - Miami Adult Studies on HIV (MASH) –community cohort (2022-2023)
- USDA Food Security Surveys were used to capture food insecurity
- Frailty was measured using:
  - Fried Frailty Phenotype (FFP) in MASH
  - Modified version of FFP in CNICS
- Associations between food insecurity and frailty status (robust, prefrail, frail) assessed using ordinal logistic regression:
  - Adjusted for age, sex, race/ethnicity
  - CNICS and MASH analyzed independently
- Estimates pooled using random effects meta-analysis

CONCLUSIONS

- Pooled estimates suggest that food insecurity may contribute to frailty among PWH
- Food insecurity, frailty, and pre-frailty were prevalent in these cohorts.
- Food insecurity may be important in long-term outcomes and for prevention interventions

RESULTS

- PWH in this study had a mean age of 51 years, were 81% male, and racially/ethnically diverse
- Low food security was associated with frailty in pooled estimates
- Very low food security was associated with frailty in both cohorts independently and pooled estimates

	CNICS	MASH	TOTAL
Mean Age (±SD)	50 (±13)	61 (± 7)	51 (±13)
Men vs Women	87%	52%	81%
African American/ Black	35%	71%	40%
White	43%	7%	38%
Latine/Hispanic	16%	19%	17%
Another Race/Ethnicity	6%	3%	6%

Table: Adjusted models of food insecurity and frailty by cohort and combined (N=3,311)

	CNICS (N=2,850)		MASH (N=461)		Combined (I^2 =0)	
	aOR	95% CI	aOR	95% CI	aOR	95% CI
Low Food Security vs Secure	2.25	1.91, 2.67	1.35	0.66, 2.55	2.18	1.91, 2.67
Very Low Food Security vs Secure	4.97	3.88, 6.35	5.62	2.67, 11.84	5.03	3.98, 6.35

aOR – adjusted odds ratio 95% CI – 95% confidence interval *Models adjusted for age, sex, race/ethnicity*

- Food insecurity, frailty, and prefrailty were common in these two cohorts of PWH

CNICS	MASH	TOTAL
Low Food Security		
28%	11%	26%
Very Low Food Security		
11%	9%	11%
Prefrail		
44%	63%	47%
Frail		
11%	15%	11%

PLAIN LANGUAGE SUMMARY:

Not having regular access to nutritious food (i.e., food insecurity) was associated with low and very low physical and mental "reserve" (i.e., frailty). These conditions were common among people with HIV receiving health care and in the community. This suggests that regular access to nutritious food may be important to longer term health in people with HIV.

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