

# Assessing the impact of food insecurity on HIV medication adherence in the context of an integrated care facility for people living with HIV in Vancouver, Canada

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## Introduction

- Despite provision of universal HIV care, people living with HIV (PLHIV) in British Columbia, Canada may experience substantial barriers to optimal adherence of combination antiretroviral therapy (cART) [1].
- Food insecurity, or experiences of uncertain or inadequate food access due to limited financial resources, has been associated with poor adherence and remains highly prevalent among PLHIV [2].
- Objective:** Examine the impact of food insecurity on cART adherence in the context of an integrated care facility that provides multiple services for PLHIV (e.g. art therapy, counseling), including the provision of two meals per day.

## Materials & Methods

- Data collection:** We drew on survey data collected between February 2014-March 2016 from the Dr. Peter Centre (DPC) study and clinical data from BC's HIV treatment program. PLHIV who were not on cART at baseline were excluded.



Figure 1: The Dr. Peter Centre (Source: www.drpeter.org/about-us/)

- Primary measures:** The outcome variable was optimal cART adherence based on pharmacy refill compliance at  $\geq 95\%$ . The primary explanatory variable was food insecurity (food secure vs. food insecure) in the past 12 months measured by Health Canada's Household Food Security Module (HFSSM).
- Statistical analysis:** Adjusted odds ratios (aOR) were estimated by generalized estimating equations, quantifying the relationship between food insecurity and cART adherence with logistic regression.
- Confounders:** Illicit drug use, self-reported anxiety and/or depression, hepatitis C diagnosis, current living status, age, and cumulative months on cART were selected using a change-in-estimate approach.

## Results

- This study included 116 PLHIV at baseline, with 99 participants completing the follow up survey after 12 months.
- At baseline, 74% (n=86) of participants reported experiencing food insecurity (> 2 affirmative responses on the HFSSM) and 67% (n=78) were  $\geq 95\%$  cART adherent.

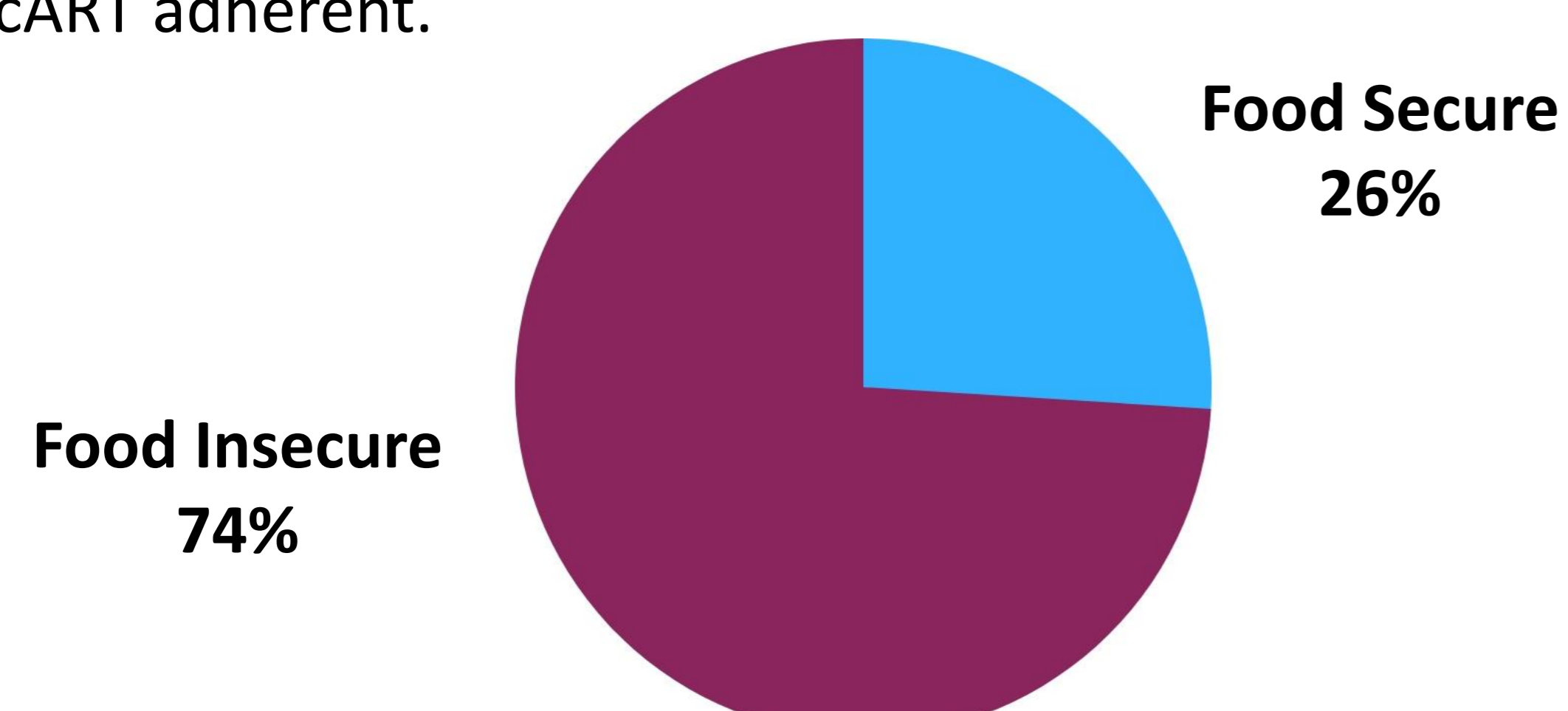


Figure 2: Proportion of DPC participants who are food insecure and food secure

## Results Continued

- The median age was 46 years (IQR: 39-52) at baseline, 82% (n=95) were biologically male at birth, and 53% (n=62) had used illicit drugs in the past six months.
- In the adjusted analysis, food insecurity was significantly associated with suboptimal cART adherence (aOR=0.47, 95% confidence interval = 0.24-0.93).

Variable	aOR (95% CI)
<b>Food security in the past 12 months</b>	
Food secure	Ref
Food insecure (moderate/severe)	0.47 (0.24-0.93)
<b>Illicit drug use (excluding marijuana) in the past 6 months</b>	
No	Ref
Yes	0.59 (0.32-1.09)
<b>Current self-reported anxiety and/or depression</b>	
Not anxious or depressed	Ref
Anxious or depressed (moderate/severe)	0.77 (0.35-1.70)
<b>Ever diagnosed with Hepatitis C</b>	
No	Ref
Yes	0.56 (0.25-1.26)
<b>Current living status</b>	
Alone	Ref
With others	3.32 (1.47-7.50)
<b>Age at interview date</b>	
Median (IQR): 47 (41-53)	1.16 (0.82-1.63)
<b>Cumulative months on cART</b>	
Median (IQR): 57 (26-101)	1.14 (1.05-1.23)

Table 1: Logistic regression of the association between food security and cART adherence

## Conclusions

- The high prevalence of food insecurity among DPC clients was similar to that documented in other Canadian studies of PLHIV [1].
- Participants who were food insecure were approximately half as likely to be adherent to cART.
- While integrated interventions that include food may be effective at reducing hunger or providing entry points to care [3], they may not necessarily address income-related food insecurity. Future studies that elucidate effective strategies to mitigate food insecurity and poverty among PLHIV in this integrated care setting are necessary.

## References

- Anema A, Vogenthaler N, Frongillo E, et al. Food insecurity and HIV/AIDS: Current knowledge, gaps, and research priorities. *Curr HIV/AIDS Rep.* 2009;6(4):224-31
- Anema A, Fielden SJ, Shurgold S, et al. Association between food insecurity and procurement methods among people living with HIV in a high resource setting. *PLoS One.* 2016;11(8):1-20.
- Collins AB, Parashar S, Hogg RS, et al. Integrated HIV care and service engagement among people living with HIV who use drugs in a setting with a community-wide treatment as prevention initiative: A qualitative study in Vancouver, Canada. *J Int AIDS Soc.* 2017;20(1):21407.

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