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HIV-Related Pill Aversion: A Novel Barrier to Adherence

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ABSTRACT

Objective: Pill aversion, defined as difficulty swallowing pills without identifiable medical cause as well as anxiety associated with pill swallowing, is a poorly characterized barrier to sustained viral load suppression in HIV-infected adults. We aimed to determine the prevalence of pill aversion in an adult outpatient HIV population and describe the relationship between symptoms and skipping pills.
Methods: We conducted an observational study of HIV-infected individuals at a single urban tertiary care center. Participants attending HIV clinic were asked to complete anonymous questionnaires about their experiences of swallowing HAART pills. The primary outcome was skipping pills due to pill aversion symptoms; this was defined as any affirmative response regarding skipping pills due to feeling uncomfortable taking them, problems swallowing them, or pill qualities. Descriptive statistics and bivariable analyses were used as appropriate. Multivariable logistical regression was utilized to determine factors associated with skipping pills.
Results: Of 312 participants (mean age 47.8y), a majority were male (74.8%) and identified as white (48.4%) or non-Hispanic black (NHB; 40.8%). Nearly a quarter (24.8%) skipped pills due to pill aversion symptoms. Younger age, being NHB or Hispanic compared to white and having public insurance were associated with skipping pills due to pill aversion. Depression (27.6%) and anxiety (21.2%) were common and associated with pill aversion on bivariable analysis, but this association did not persist on multivariate analysis. Individuals who skipped pills were more likely to report a detectable viral load (25.7% vs. 8.5%, p=0.001) and have a lower self-reported adherence (79.4% vs. 94.9%, p<0.001). Importantly, participants who skip pills were more likely to report negative sensations of gagging (13.5% vs. 5.0%, p=0.013), choking (9.5% vs. 1.8%, p=0.003), pills getting stuck in the throat (24.3% vs. 9.0%, p=0.001), and heavy feeling in the stomach (18.9% vs. 0.9%, p<0.001), as well as being bothered by the taste, smell, and size of pills (all p<0.001).
Conclusions: HIV-related pill aversion is surprisingly frequent. Symptoms of pill aversion are a significant and novel barrier to adherence in an adult HIV population.

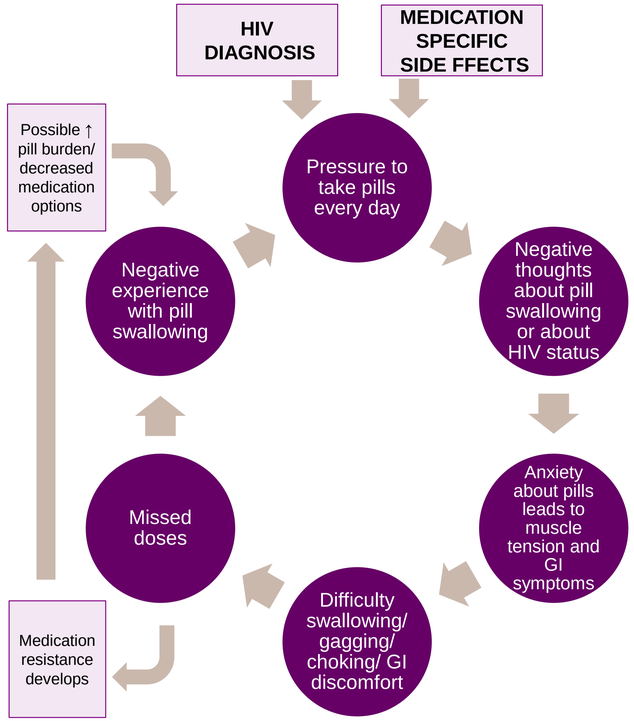
BACKGROUND

- Pill Aversion: Difficulty swallowing pills without identifiable medical cause as well as anxiety associated with pill swallowing
- From our observations, HIV-infected individuals vary greatly in their attitudes, reactions, and level of distaste for their pills. This variation is essential in understanding potential barriers to adherence.
- HIV pill swallowing discussion exists only in the pediatric literature and focuses on new learning for pill swallowing.

OBJECTIVES

- To determine the prevalence of pill aversion in an adult outpatient HIV population
- Describe the relationship between pill aversion symptoms and medication adherence

CONCEPTUALIZATION OF PILL AVERSION



METHODS

- Observational study of HIV-infected adults at a single, large urban tertiary care center
- Patients attending HIV clinic routine care were asked to complete an anonymous questionnaire about their experiences swallowing pills
- **Inclusion criteria:** HIV-infected, prescribed HAART, English speaking, age >18y, able to read a questionnaire in English
- **Primary outcome:**
  - Skipping pills due to pill aversion symptoms
    - Any affirmative response to items regarding discomfort with taking pills, problems swallowing pills, or pill qualities
- **Secondary outcomes:**
  - Factors associated with skipping pills due to pill aversion symptoms
- **Analyses:**
  - Descriptive statistics
  - Bivariable analyses
  - Multivariable logistic regression

RESULTS

Table 1. Clinical and Demographic Characteristics

	Skip Pills N (%) N=74	Do not skip pills N (%) N=224	p-value
Gender			<0.001
Male	43 (19.3)	180 (80.7)	
Female	30 (42.3)	41 (57.8)	
Race/ethnicity			<0.001
Non-Hispanic white	9 (12.2)	136 (60.7)	
Non-Hispanic black	59 (79.7)	60 (26.79)	
Hispanic	5 (7.0)	29 (13.4)	
Other	6 (8.1)	28 (12.5)	
Age – Mean (y)	43.3	48.9	0.002
Public insurance	54 (75.0)	91 (41.2)	<0.001
Years since HIV diagnosis Mean (y)	14.6	15.4	0.675
Some college education or greater	26 (35.4)	129 (58.4)	0.001
History of mental illness diagnosis			
Anxiety	25 (33.8)	40 (17.9)	0.004
Depression	31 (41.9)	51 (22.8)	0.001
Other diagnosis	9 (12.2)	20 (8.9)	0.416
Number of daily pills-Mean number	2.2	1.5	0.003
Self reported detectable viral load	19 (25.7)	19 (8.5)	0.001
Self reported adherence- Mean %	79.4	94.9	<0.001

Figure 1. Feelings About Swallowing Pills

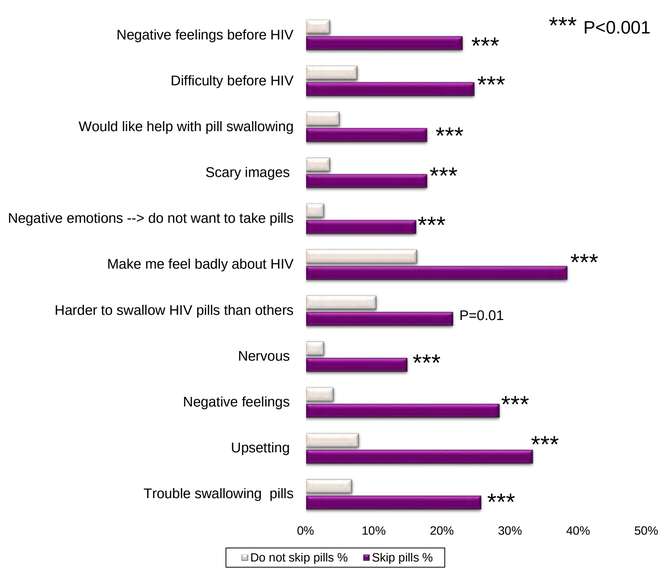
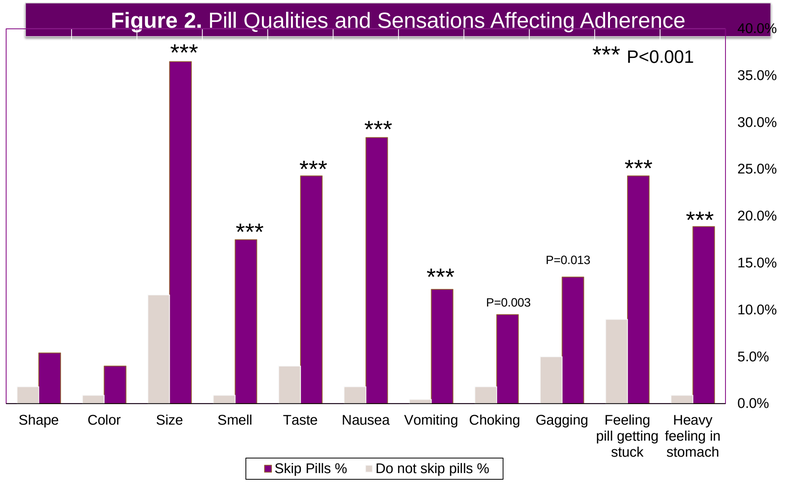


Figure 2. Pill Qualities and Sensations Affecting Adherence



- Mean total number of **pill qualities affecting adherence** (taste, smell, size, color, shape) per person: Skip pills: 0.95 vs. do not skip pills: 0.23; (p=<0.001)
- Mean total number of **sensations affecting adherence** (heavy feeling, feeling pill stuck, gagging, choking, vomiting, nausea) per person: Skip pills: 1.2 vs Do not skip pills: 0.2; (p=<0.001)

CONCLUSIONS

- HIV-related pill aversion is a surprisingly frequent and notable barrier to medication adherence at our center.
- 25% of HIV-infected individuals report skipping pills due to pill aversion symptoms
- Pill aversion is associated with patient characteristics, emotions, pill qualities, and sensations
- Pill aversion and skipping pills are likely part of a reinforcing poor adherence cycle

FUTURE DIRECTIONS

- Further investigate prevalence, generalizability, and characterization of pill aversion
- Determine characteristics of pill aversion in subgroup populations
- Develop and validate a brief screening tool for use in an HIV clinic to identify pill aversion and risk factors

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