

Association between Substance Use and PrEP Adherence Among AGYW Enrolled in a PrEP HIV Prevention Trial (HPTN 082) in Southern Africa

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Presentation Highlights

- There was a high prevalence of hazardous alcohol use and substance use in AGYW
- Hazardous drinking and substance use were associated with poor PrEP adherence
- Formative work is required to determine facilitators/drivers of substance use in AGYW in SSA, who are at risk of HIV acquisition
- Further research is required to inform the integration of screening for hazardous drinking and substance use in HIV prevention programs and PrEP rollout targeted towards AGYW

Background

- Substance use (SU), is a growing global public health concern
- The World Health Organization (WHO) reports cannabis and amphetamine use as the most widely used substance in Africa
- SU has increased in prevalence among adolescents and young people
 - Sub-Saharan Africa-41.6%
 - Southern Africa-37% (Olawole-Isaac et al., 2018)



Background

- SU can result in poorer medication adherence
- Medication adherence is essential in the use of oral Pre-Exposure Prophylaxis (PrEP) for HIV prevention
- Studies show a clear dose-response relationship between protection and adherence



Background

- Studies have been conducted to show the association between SU and PrEP adherence
 - Shuper et al 2020 showed that hazardous alcohol use and moderate/high cocaine use were independent predictors of PrEP nonadherence in gbMSM
 - Felsner et al., 2021- addressing daily survival needs took precedence over PrEP adherence in women who inject drugs
- However there has not been a study conducted to determine the prevalence of SU and its association with PrEP adherence in adolescent girls and young women (AGYW) in Sub-Saharan Africa

Project Objectives/Aims

- Research Aim #1: To determine the prevalence of substance use at baseline and how it changes over time
- Research Aim #2: To determine if there is an association between substance use and PrEP adherence

Method

Used data collected from the Computer Assisted Self Interview (CASI), at baseline, weeks 13, 26, and 52

Independent Variable

- Hazardous Alcohol Use-AUDIT-C Score \geq 3
- Substance Use-scored as 0, 1-10, $<$ 10

Dependent Variables

- PrEP Adherence - Dry Blood Spot concentration of intracellular TFV-DP in fmol/punch

DESCRIPTIVE ANALYSIS

- Descriptive statistics were used to determine the prevalence of hazardous alcohol and substance use including the use of a needle to inject substances at baseline, weeks 13, 26 and 52
- TDF-DP(fmol/punch) DBS concentrations were also determined at weeks 13, 26 and 52

ANALYTICAL PLAN

- Repeated measure multinomial regression modeling with categorical PrEP drug concentration for weeks 13, 26, and 52 was used to determine the association between alcohol and substance use with PrEP adherence

Results: Characteristics of PrEP Acceptors

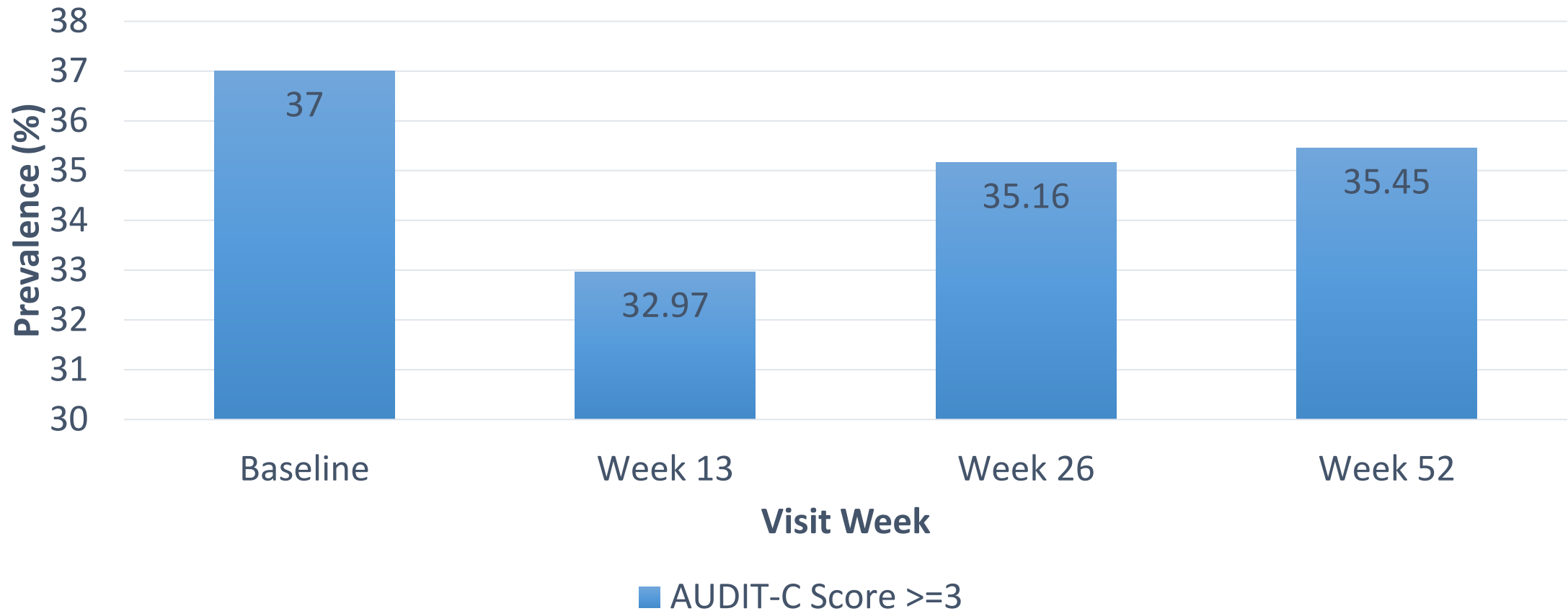
	Overall	Spilhaus CRS	Emavundleni CRS	Ward 21 CRS
Total Participants Enrolled	427	145 (34.0%)	140 (32.8%)	142 (33.2%)
Age (years)				
16 - 17	27/427 (6.3%)	10/145 (6.9%)	15/140 (10.7%)	2/142 (1.4%)
18 - 21	239/427 (56.0%)	72/145 (49.7%)	98/140 (70.0%)	69/142 (48.6%)
22 - 26	161/427 (37.7%)	63/145 (43.4%)	27/140 (19.3%)	71/142 (50.0%)
Education				
No Schooling	0/427 (0.0%)	0/145 (0.0%)	0/140 (0.0%)	0/142 (0.0%)
Primary School	9/427 (2.1%)	7/145 (4.8%)	1/140 (0.7%)	1/142 (0.7%)
Secondary School	371/427 (86.9%)	136/145 (93.8%)	126/140 (90.0%)	109/142 (76.8%)
College or University	47/427 (11.0%)	2/145 (1.4%)	13/140 (9.3%)	32/142 (22.5%)
Participant currently in school	161/427 (37.7%)	8/145 (5.5%)	63/140 (45.0%)	90/142 (63.4%)
Participant ever dropped out of school	125/427 (29.3%)	58/145 (40.0%)	45/140 (32.1%)	22/142 (15.5%)

Results: Prevalence Of Alcohol and Substance Use at Baseline

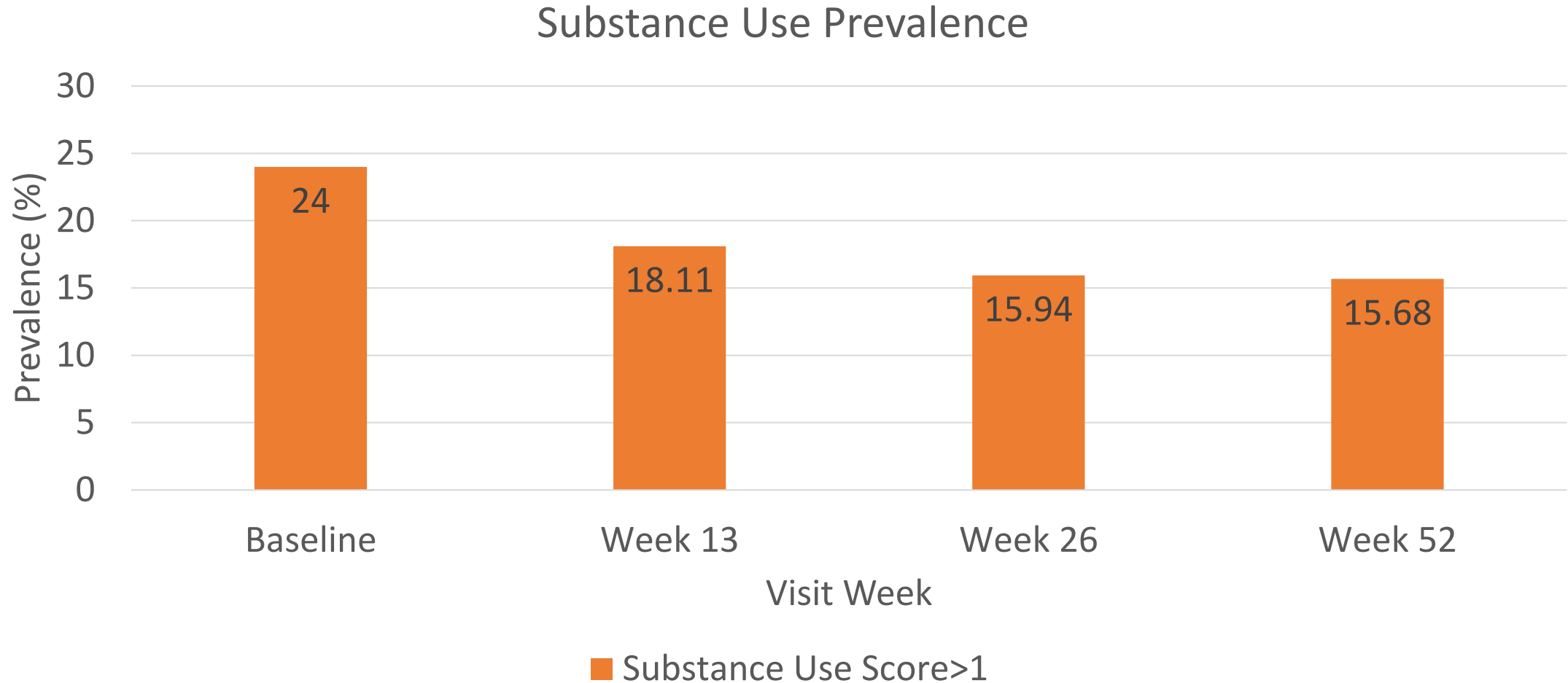
	Overall	Spilhaus CRS	Emavundleni CRS	Ward 21 CRS
Audit Score				
0	165/427 (39%)	97/145 (67%)	27/140 (19%)	41/142 (29%)
1-2	94/427 (22%)	21/145 (14%)	36/140 (26%)	37/142 (26%)
>=3	160/427 (37%)	23/145 (16%)	74/140 (53%)	63/142 (44%)
Missing	8/427 (2%)	4/145 (3%)	3/140 (2%)	1/142 (1%)
Drug Score				
0	317/427 (74%)	110/145 (76%)	112/140 (80%)	95/142 (67%)
1-10	98/427 (23%)	31/145 (21%)	25/140 (18%)	42/142 (30%)
>10	4/427 (1%)	1/145 (1%)	1/140 (1%)	2/142 (1%)
Missing	8/427 (2%)	3/145 (2%)	2/140 (1%)	3/142 (2%)
Have you ever used a needle to inject drugs?				
No	419/427 (98%)	144/145 (99%)	136/140 (97%)	139/142 (98%)
Yes	5/427 (1%)	1/145 (1%)	2/140 (1%)	2/142 (1%)
Prefer not to answer	1/427 (<1%)	0/145 (0%)	1/140 (1%)	0/142 (0%)
Missing	2/427 (<1%)	0/145 (0%)	1/140 (1%)	1/142 (1%)

Results: Prevalence Of Alcohol Use Among PrEP Acceptors By Visit

Hazardous Alcohol Use Prevalence



Results: Prevalence Of Substance Use Among PrEP Acceptors By Visit



Association Between PrEP Concentration And AUDIT-C Score

	Unadjusted Odds Ratio	Unadjusted 95% Confidence Interval	Adjusted Odds ratio (By SITE)	Adjusted 95% Confidence Interval	P-Value
Audit C-Score 0	Ref	Ref	Ref	Ref	Ref
Audit C-Score 1-2	1.2459	(0.8901, 1.7440)	1.5845	(1.1059, 2.2702)	0.0121
Audit C-Score ≥ 3	1.3298	(0.9634, 1.8354)	1.8099	(1.2677, 2.5840)	0.0011

Association Between PrEP Concentration And SU Score

	Unadjusted Odds Ratio	Unadjusted 95% Confidence Interval	Adjusted Odds ratio (By SITE)	Adjusted 95% Confidence Interval	P- Value
Drug Score 0	Ref	Ref	Ref	Ref	Ref
Drug Score 1-10	1.5912	(1.1249, 2.2510)	1.5801	(1.1093, 2.2506)	0.0112
Drug Score >10	0.3202	(0.0812, 1.2633)	0.3315	(0.0823, 1.3350)	0.1203

Conclusion

- Among AGYW who were PrEP Acceptors, 37% of were hazardous drinkers and 24% were substance user
- Hazardous alcohol use, and substance use was associated with PrEP non-adherence

Implications/Future Considerations

- Formative work is required to determine facilitators and determinants of substance use in AGYW in the African context.
 - This will allow for the implementation of both biomedical and behavioral interventions, aimed at preventing and treating AGYW substance users
- There is a need for further research into the role that substance use plays as a potential driver of HIV infection.
 - Inform HIV prevention programs eg PrEP roll-out, targeted toward substance users in SSA

Thank you



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