

How Status Quo Bias Shapes Willingness, Uptake, and Adherence to PrEP among Chinese MSM: A Behavioral Economics Perspective

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Supplementary Table 1. Constructs and Items

Transaction costs	TC1	It would take a lot of time and effort for PrEP-related physical exams.
	TC2	I would spend a lot of money if I were to switch to using PrEP.
	TC3	There would be health-related side effects if I were to switch to using PrEP.
	TC4	Switching to using PrEP could result in unexpected hassles.
Social norms	SN1	My doctors/community outreach worker think I should use PrEP. [reverse-coded item]
	SN2	My family/friends think I should use PrEP. [reverse-coded item]
	SN3	My sex partners think I should use PrEP. [reverse-coded item]
Condom-use		I will continue using condoms for preventing HIV, ...
Inertia	CI1	...simply because it is what I have always done.
	CI2	...I enjoy doing so.
	CI3	... even though I know it is not the best way of doing things.
PrEP resistance intention	RI1	I oppose the idea of using PrEP as a strategy to prevent HIV.
	RI2	I will not start using PrEP for preventing HIV.
	RI3	I will not comply with the medical instructions to use PrEP for preventing HIV.

Supplementary Table 2. Reliability and Convergent validity

Variables	Mean (SD)	Cronbach's alpha (Alpha)	Composite reliability (CR)	Average variance extracted (AVE)	Item	loading	T- statistics
Transaction costs	4.700 (1.104)	0.829	0.817	0.530	TC1	0.666	29.39
					TC2	0.674	30.92
					TC3	0.818	46.82
					TC4	0.743	38.51
Social norms	4.172 (1.208)	0.854	0.856	0.667	SN1	0.731	41.29
					SN2	0.870	63.36
					SN3	0.842	58.98
Condom-use Inertia	4.926 (1.299)	0.862	0.866	0.685	I1	0.894	75.13
					I2	0.851	66.18
					I3	0.729	42.05
PrEP resistance intention	3.208 (1.577)	0.928	0.929	0.815	RI1	0.827	74.82
					RI2	0.945	147.67
					RI3	0.932	137.97

Supplementary Table 3. Discriminant validity assessment based on the Fornell–Larcker criterion

Dimension	Transition costs	Social norms	Condom-use inertia	Resistance intention
Transition costs	0.728			
Social norms	0.224	0.816		
Condom-use inertia	0.469	0.111	0.828	
Resistance intention	0.244	0.225	0.072	0.903

Note: Diagonal elements (bolded) represent the square root of the average variance extracted (SQRT(AVE)). Off-diagonal elements represent the inter-construct correlation coefficients

Supplementary Table 4. Comparison of Status Quo Bias Variables by PrEP Cascade Outcomes

		PrEP-aware sample (N=933)	PrEP non-users (N=591)	PrEP users (N=431)
Variables	Groups	PrEP Use Mean (SD)	PrEP Willingness Mean (SD)	PrEP Adherence Mean (SD)
Transition costs	No	4.79 (1.07)	4.69 (1.14)	4.77 (1.01)
	Yes	4.62 (1.11)	4.80 (1.06)	4.51 (1.18)
	<i>P-value</i>	<i>0.0217</i>	<i>0.2062</i>	<i>0.0167</i>
Social norms	No	3.94 (1.19)	3.86 (1.29)	4.09 (1.06)
	Yes	4.40 (1.17)	4.10 (1.15)	4.68 (1.19)
	<i>P-value</i>	<i>0.0000</i>	<i>0.0178</i>	<i>0.0000</i>
Condom-use inertia	No	5.01 (1.24)	4.99 (1.21)	4.83 (1.37)
	Yes	4.85 (1.39)	4.98 (1.24)	4.86 (1.42)
	<i>P-value</i>	<i>0.0614</i>	<i>0.9470</i>	<i>0.8193</i>
PrEP resistance intention	No	3.38 (1.43)	3.83 (1.33)	2.86 (1.50)
	Yes	2.83 (1.67)	3.24 (1.47)	2.81 (1.81)
	<i>P-value</i>	<i>0.0000</i>	<i>0.0000</i>	<i>0.7536</i>

Notes: SD = Standard Deviation. P-values are derived from independent samples t-tests comparing the 'No' and 'Yes' groups for each PrEP outcome

**Supplementary Table 5A. Moderation and Interaction Analyses of PrEP Resistance
Intention among PrEP-aware Sample (N=933)**

Variables	Model 1 β (95% CI)	Model 2 β (95% CI)	Model 3 β (95% CI)	Model 4 β (95% CI)
Age (Years)	-0.01 (-0.03, 0.00)	-0.01 (-0.03, 0.00)	-0.01 (-0.03, 0.00)+	-0.01 (-0.03, 0.00)
Sexual orientation (Ref: Heterosexual)				
Homosexual	-1.81 (-2.45, -1.16)***	-1.76 (-2.40, -1.12)***	-1.81 (-2.46, -1.17)***	-1.83 (-2.47, -1.19)***
Bisexual	-1.53 (-2.19, -0.86)***	-1.48 (-2.15, -0.81)***	-1.54 (-2.21, -0.88)***	-1.55 (-2.21, -0.88)***
Unsure/Other	-1.81 (-3.37, -0.26)*	-1.77 (-3.32, -0.22)*	-1.86 (-3.41, -0.31)*	-1.86 (-3.40, -0.31)*
Marriage status (Ref: Never married)				
Engaged/Married	-0.10 (-0.51, 0.31)	-0.14 (-0.55, 0.27)	-0.11 (-0.52, 0.30)	-0.13 (-0.54, 0.28)
Separated/Divorced/Widowed	0.60 (0.10, 1.10)*	0.57 (0.07, 1.07)*	0.61 (0.11, 1.11)*	0.57 (0.07, 1.07)*
Highest education level (Ref: High school or below)				
Bachelor's degree	-0.81 (-1.12, -0.49)***	-0.80 (-1.12, -0.49)***	-0.79 (-1.11, -0.48)***	-0.78 (-1.09, -0.46)***
Graduate degree or above	-0.85 (-1.24, -0.46)***	-0.84 (-1.23, -0.45)***	-0.84 (-1.23, -0.45)***	-0.81 (-1.19, -0.42)***
Monthly income (Yuan) (Ref: ≤ 3000)				
3001-5000	-0.08 (-0.43, 0.26)	-0.09 (-0.44, 0.26)	-0.10 (-0.44, 0.25)	-0.10 (-0.45, 0.24)
5001-8000	0.06 (-0.25, 0.38)	0.06 (-0.26, 0.37)	0.05 (-0.26, 0.37)	0.03 (-0.29, 0.34)
>8000	-0.01 (-0.33, 0.31)	-0.01 (-0.32, 0.31)	-0.02 (-0.33, 0.30)	-0.02 (-0.34, 0.29)
Number of regular male partners (Ref: 0)				
1	-0.10 (-0.38, 0.17)	-0.10 (-0.37, 0.18)	-0.11 (-0.38, 0.17)	-0.10 (-0.37, 0.17)
>1	0.10 (-0.20, 0.41)	0.10 (-0.21, 0.40)	0.10 (-0.20, 0.41)	0.09 (-0.22, 0.39)
Number of casual male partners (Ref: 0)				
1	0.30 (0.07, 0.54)*	0.28 (0.05, 0.52)*	0.30 (0.06, 0.53)*	0.29 (0.06, 0.53)*
>1	-0.44 (-0.71, -0.18)**	-0.46 (-0.72, -0.20)***	-0.44 (-0.70, -0.18)**	-0.41 (-0.68, -0.15)**
Substance use during sexual activities (Ref: No)				
Yes	-0.22 (-0.44, 0.00)+	-0.22 (-0.44, 0.00)+	-0.21 (-0.43, 0.01)+	-0.21 (-0.43, 0.01)+
Transition costs	0.28 (0.19, 0.38)***	0.29 (0.19, 0.38)***	0.29 (0.19, 0.38)***	0.28 (0.19, 0.38)***
Social norms	-0.17 (-0.25, -0.09)***	-0.18 (-0.26, -0.10)***	-0.15 (-0.23, -0.07)***	-0.15 (-0.23, -0.07)***
Condom-use inertia	-0.02 (-0.10, 0.06)	-0.01 (-0.09, 0.07)	-0.01 (-0.09, 0.07)	-0.01 (-0.09, 0.07)
Transition costs $\times$ condom-use inertia		0.06 (0.01, 0.11)*		

Social norms × condom-	-0.05 (-0.10, -0.00)*
use inertia	
Transition costs × social	-0.09 (-0.14, -
norms	0.03)*

Notes: Coefficients are shown with 95% Confidence Intervals in parentheses.

⁺ $p < 0.10$, ^{*} $p < 0.05$, ^{**} $p < 0.01$, ^{***} $p < 0.00$

**Supplementary Table 5B. Moderation and Interaction Analyses of PrEP Resistance
Intention among PrEP Non-users (N=591)**

Variables	Model 1 β (95% CI)	Model 2 β (95% CI)	Model 3 β (95% CI)	Model 4 β (95% CI)
Age (Years)	-0.01 (-0.02, 0.01)	-0.01 (-0.02, 0.01)	-0.01 (-0.02, 0.01)	-0.01 (-0.02, 0.01)
Sexual orientation (Ref: Heterosexual)		0.00 (0.00, 0.00)	0.00 (0.00, 0.00)	0.00 (0.00, 0.00)
Homosexual	-0.39 (-1.15, 0.37)	-0.40 (-1.16, 0.36)	-0.36 (-1.12, 0.39)	-0.41 (-1.17, 0.35)
Bisexual	-0.19 (-0.96, 0.58)	-0.20 (-0.97, 0.58)	-0.15 (-0.93, 0.62)	-0.21 (-0.99, 0.57)
Unsure/Other	-0.04 (-2.13, 2.04)	-0.06 (-2.14, 2.03)	0.07 (-2.01, 2.16)	-0.07 (-2.16, 2.01)
Marriage status (Ref: Never married)		0.00 (0.00, 0.00)	0.00 (0.00, 0.00)	0.00 (0.00, 0.00)
Engaged/Married	-0.06 (-0.49, 0.36)	-0.05 (-0.48, 0.37)	-0.04 (-0.46, 0.38)	-0.08 (-0.51, 0.34)
Separated/Divorced/Widowed	0.38 (-0.16, 0.92)	0.41 (-0.14, 0.96)	0.39 (-0.15, 0.93)	0.36 (-0.18, 0.91)
Highest education level (Ref: High school or below)			0.00 (0.00, 0.00)	0.00 (0.00, 0.00)
Bachelor's degree	-0.49 (-0.83, -0.15)**	-0.48 (-0.82, -0.15)**	-0.49 (-0.83, -0.15)**	-0.49 (-0.82, -0.15)**
Graduate degree or above	-0.46 (-0.90, -0.02)*	-0.46 (-0.90, -0.02)*	-0.46 (-0.89, -0.02)*	-0.45 (-0.89, -0.02)*
Monthly income (Yuan) (Ref: ≤3000)		0.00 (0.00, 0.00)	0.00 (0.00, 0.00)	0.00 (0.00, 0.00)
3001-5000	0.10 (-0.28, 0.49)	0.10 (-0.28, 0.48)	0.10 (-0.28, 0.48)	0.10 (-0.28, 0.48)
5001-8000	0.28 (-0.07, 0.62)	0.27 (-0.08, 0.62)	0.26 (-0.08, 0.61)	0.27 (-0.08, 0.62)
>8000	0.30 (-0.06, 0.66)+	0.30 (-0.07, 0.66)	0.30 (-0.06, 0.66)	0.30 (-0.06, 0.66)
Number of regular male partners (Ref: 0)		0.00 (0.00, 0.00)	0.00 (0.00, 0.00)	0.00 (0.00, 0.00)
1	-0.14 (-0.46, 0.18)	-0.14 (-0.46, 0.18)	-0.13 (-0.45, 0.19)	-0.14 (-0.46, 0.18)
>1	0.27 (-0.12, 0.66)	0.26 (-0.13, 0.65)	0.26 (-0.13, 0.65)	0.27 (-0.12, 0.66)
Number of casual male partners (Ref: 0)		0.00 (0.00, 0.00)	0.00 (0.00, 0.00)	0.00 (0.00, 0.00)
1	0.23 (-0.04, 0.50)+	0.24 (-0.03, 0.51)+	0.24 (-0.03, 0.51)+	0.23 (-0.04, 0.50)+
>1	-0.33 (-0.67, 0.01)+	-0.33 (-0.67, 0.02)+	-0.32 (-0.66, 0.02)+	-0.32 (-0.66, 0.02)+
Substance use during sexual activities (Ref: No)				
Yes	-0.19 (-0.48, 0.11)	-0.18 (-0.47, 0.12)	-0.18 (-0.47, 0.12)	-0.19 (-0.48, 0.11)
Transition costs	0.15 (0.03, 0.26)*	0.15 (0.03, 0.27)*	0.14 (0.02, 0.26)*	0.15 (0.03, 0.28)*
Social norms	-0.26 (-0.36, -0.17)***	-0.26 (-0.36, -0.16)***	-0.29 (-0.40, -0.19)***	-0.26 (-0.36, -0.16)***
Condom-use inertia	0.00 (-0.10, 0.11)	-0.01 (-0.11, 0.10)	-0.02 (-0.13, 0.08)	0.00 (-0.10, 0.11)
Transition costs × condom-use inertia		-0.02 (-0.08, 0.03)		
Social norms condom-use × inertia			0.05 (-0.01, 0.11)	

Transition costs × social norms	-0.02 (-0.08, 0.04)
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95% confidence intervals in brackets
⁺ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

**Supplementary Table 5C. Moderation and Interaction Analyses of PrEP Resistance
Intention among PrEP Users (N=431)**

Variables	Model 1 β (95% CI)	Model 2 β (95% CI)	Model 3 β (95% CI)	Model 4 β (95% CI)
Age (Years)	-0.03 (-0.06, -0.01)**	-0.03 (-0.05, -0.01)*	-0.03 (-0.06, -0.01)**	-0.03 (-0.05, -0.00)*
Sexual orientation (Ref: Heterosexual)				
Homosexual	-2.69 (-3.60, -1.79)***	-2.40 (-3.29, -1.50)***	-2.56 (-3.45, -1.67)***	-2.57 (-3.46, -1.68)***
Bisexual	-2.30 (-3.26, -1.34)***	-2.01 (-2.96, -1.07)***	-2.22 (-3.16, -1.28)***	-2.22 (-3.16, -1.28)***
Unsure/Other	-2.41 (-4.59, -0.23)*	-2.15 (-4.28, -0.02)*	-2.32 (-4.46, -0.19)*	-2.34 (-4.48, -0.21)*
Marriage status (Ref: Never married)				
Engaged/Married	0.34 (-0.36, 1.04)	0.26 (-0.43, 0.94)	0.44 (-0.25, 1.12)	0.42 (-0.26, 1.11)
Separated/Divorced/Widowed	0.92 (0.09, 1.76)*	1.00 (0.18, 1.81)*	0.88 (0.06, 1.69)*	0.81 (-0.00, 1.63)+
Highest education level (Ref: High school or below)				
Bachelor's degree	-1.04 (-1.60, -0.49)***	-1.01 (-1.55, -0.47)***	-1.02 (-1.56, -0.48)***	-0.96 (-1.50, -0.42)***
Graduate degree or above	-1.15 (-1.79, -0.51)***	-1.07 (-1.69, -0.44)***	-1.08 (-1.71, -0.45)***	-1.04 (-1.67, -0.41)**
Monthly income (Yuan) (Ref: ≤3000)				
3001-5000	0.01 (-0.57, 0.59)	-0.10 (-0.67, 0.47)	-0.06 (-0.63, 0.51)	-0.05 (-0.62, 0.52)
5001-8000	0.08 (-0.47, 0.63)	-0.05 (-0.58, 0.49)	-0.04 (-0.58, 0.50)	-0.05 (-0.59, 0.49)
>8000	0.05 (-0.49, 0.59)	-0.05 (-0.58, 0.48)	-0.03 (-0.56, 0.50)	-0.02 (-0.55, 0.51)
Number of regular male partners (Ref: 0)				
1	-0.25 (-0.68, 0.18)	-0.21 (-0.63, 0.20)	-0.24 (-0.66, 0.18)	-0.23 (-0.65, 0.19)
>1	-0.12 (-0.56, 0.32)	-0.16 (-0.59, 0.27)	-0.14 (-0.58, 0.29)	-0.19 (-0.63, 0.24)
Number of casual male partners (Ref: 0)				
1	0.42 (0.04, 0.79)*	0.38 (0.01, 0.74)*	0.43 (0.07, 0.80)*	0.39 (0.02, 0.75)*
>1	-0.44 (-0.83, -0.06)*	-0.52 (-0.90, -0.14)**	-0.42 (-0.80, -0.04)*	-0.41 (-0.79, -0.03)*
Substance use during sexual activities (Ref: No)				
Yes	-0.01 (-0.32, 0.29)	0.02 (-0.28, 0.32)	0.05 (-0.25, 0.35)	0.01 (-0.29, 0.31)
Transition costs	0.33 (0.20, 0.47)***	0.35 (0.22, 0.48)***	0.33 (0.20, 0.46)***	0.27 (0.13, 0.40)***
Social norms	-0.20 (-0.32, -0.08)***	-0.19 (-0.31, -0.08)**	-0.16 (-0.28, -0.04)**	-0.20 (-0.31, -0.08)**
Transition costs	-0.01 (-0.12, 0.09)	0.02 (-0.08, 0.13)	-0.03 (-0.14, 0.07)	-0.01 (-0.11, 0.09)
Social norms		0.18 (0.10, 0.25)*		
Condom-use inertia			-0.14 (-0.21, -0.08)*	
Transition costs × condom-use inertia				-0.18 (-0.26, -0.10)*

95% confidence intervals in brackets

⁺ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$