

## Problem Two (Data Analysis) Grading Criteria and Suggested Answers

Enclosed is the form that will be used to grade the individual problem. As you will note, the scale in missed points goes from 0 to 30 (or 35 if handed in late).

Maximum points off	No.	Description
-5		If late
-6	1	Create a report and briefly describe the findings and policy implications.
-1	2	Create the four management forms for your survey.
-1	3	Select 30 cluster with probability proportionate to population size
-1	4	Fill out Forms 1, 3 and 4 for your <u>two</u> designated clusters
-1	6	Present a frequency distribution of AGE, SEX15, CASUAL, CONDOM, SHIV and RST
-1	7	Is sample size adequate to assess the prevalence of HIV infection in the study population +/- 3 percentage points.
-1	8	Derive the 95% confidence limits for the estimated <u>true</u> prevalence of HIV and syphilis
-1	9	Derive by two-year age groups the point estimate and 95% confidence interval for prevalence of syphilis
-1	10	Determine point estimate and 95% CI for SHIV by SEXA in a graph
-1	11	Answer the research question about RST and CASUAL (PR and OR)
-1	12	Answer the research question about SHIV and CASUAL (PR and OR)
-1	13	Answer the research question about CASUAL and RST by SEX15 (PR and OR)
-1	14	Answer the research question about CASUAL and SHIV by SEX15 (PR and OR)
-1	15	Answer the research question about CASUAL and RST by AGE and SEX15 (PR and OR)
-1	16	Answer the research question about CASUAL and SHIV by AGE and SEX15 (PR and OR)
-1	17	Answer the research question about CONDOM and RST (PR and OR)
-1	18	Answer the research question about CONDOM and SHIV (PR and OR)
-1	19	Answer the research question about CONDOM and RST by SEXA15 (PR and OR)
-1	20	Answer the research question about CONDOM and SHIV by SEXA15 (PR and OR)
-1	21	Answer the research question about CONDOM and RST by CASUAL (PR and OR)
-1	22	Answer the research question about CONDOM and SHIV by CASUAL (PR and OR)
-1	23	Answer the research question about CONDOM and RST by CASUAL and SEX15 (PR and OR)
-1	24	Answer the research question about CONDOM and SHIV by CASUAL and SEX15 (PR and OR)
-1	25	Answer the research question about RST and SHIV (PR and OR)
-1	26	Answer the research question about RST and SHIV by CASUAL and CONDOM (PR and OR)

## Four Management Forms

Department of Epidemiology School of Public Health University of California, Los Angeles							
Form 1		<b>MAP OF HOUSEHOLDS</b>					
Study No.	001	Study Name	URBAN STD SURVEY OF WOMEN				
Cluster No.	<input style="width: 30px; height: 15px;" type="text"/>	Community Name:					
Assigned Interviewer(s)	1 <input style="width: 30px; height: 15px;" type="text"/>	2 <input style="width: 30px; height: 15px;" type="text"/>	Spin Dial No.			<input style="width: 30px; height: 15px;" type="text"/>	0
Total HH Along Line	<input style="width: 30px; height: 15px;" type="text"/>	Random Start HH No.	<input style="width: 30px; height: 15px;" type="text"/>	Show North -->			
CONTINUE ON BACK OF PAGE IF NECESSARY							

Department of Epidemiology School of Public Health University of California, Los Angeles							
Form 2		<b>RANDOM NUMBER TABLE</b>					
2	84	258	273	127	106	166	158
166	296	79	279	14	209	196	31
21	211	185	270	200	32	66	83
275	119	64	102	80	3	161	214
90	200	235	160	128	296	49	286
221	71	67	258	99	293	225	253
279	52	287	57	119	53	251	111
25	263	247	132	217	234	205	115
36	257	262	205	140	143	172	12
63	1	9	95	110	6	36	274
174	225	230	221	285	275	31	172
24	197	158	206	87	259	211	286
214	69	69	225	200	232	289	180

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 School of Public Health  
 University of California, Los Angeles

Form 3

**HOUSEHOLD DISPOSITION**

Study No.	001		Study Name:		URBAN STD SURVEY OF WOMEN				
Cluster No.			Community Name:						
Seq. no. of HH	Adult currently Home?		Female aged 20-29 yr. currently home?		Females aged 20-39 yr. willing to participate?		Females 20-39 years		Page No.
	No	Yes	No	Yes	No	Yes	No. Currently at Home	No. who Respond	COMMENTS
Total									

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Form 4a

**STUDY DISPOSITION**

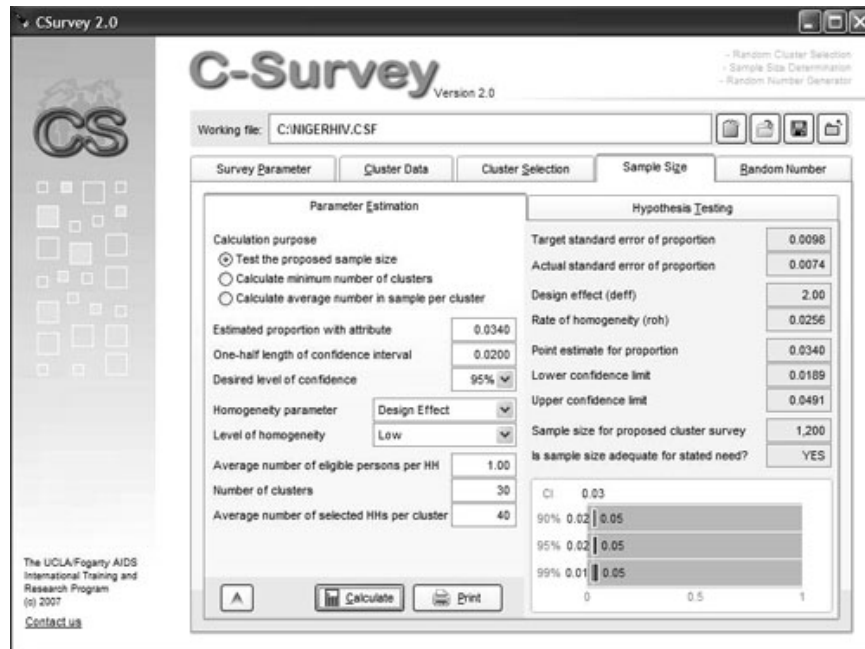
Study No.	001		Study Name:					URBAN STUDY SURVEY OF WOMEN	
Cluster no.	HHs with females at home	At home	Respondents	Participation (%)	No. of records in PC	Spin dial no.	Interviewer code no.		COMMENTS
							(1)	(2)	
1									
2									
3									
4									
5									
30									
Total									

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FORM 4b		STUDY DISPOSITION (CONTINUED)	
MEMBERS OF INTERVIEW TEAM		MEMBERS OF INTERVIEW TEAM	
Code no.	Name	Code no.	Name

		DATE OF SUBMISSION OF FINDINGS		
DATES OF FIELD ACTIVITIES		Initial Tables and Graphs	Final Report	COMMENTS
Beginning	Ending			

Next comes an example of the three tables being asked for in the problem. The first table in each series is for the total population of 10,000 sexually active women, aged 20-29 from which the 12 data sets used in the class were drawn. The second table in each series shows the values for Dataset 1, containing information on 1,200 women. The former has no confidence intervals since it represents the truth, while the second does have confidence intervals.

Before a survey is done, you typically would use *CSurvey* to determine if the planned survey has adequate statistical power to observe the estimated value of the parameter, stated in the problem as 3.4% for HIV prevalence. You then need to specify the anticipated level of statistical error that is acceptable, defined as one-half the confidence interval, stated in the problem as 2%. You assume that the level of homogeneity is low, the number of clusters to be selected is 30, and the number of eligible persons per cluster as 40. *CSurvey* then calculates if the sample size is adequate, as shown on the following page.



Csurvey 1. Sample size estimation, Niamey, Niger survey, 2008.

Thereafter 30 clusters are selected from *nigerhiv.csf* with probability proportionate to size. There are several items that need to be added to the opening screen of *CSurvey*, as shown in Figure *Csurvey PPS1*. The primary sampling unit is the district in which the clusters will be identified. The ultimate sampling unit will be the household. The data presented as persons, so the size unit is the population. The average number of persons per household in Niamey is 3.6. The population of Niamey is estimated to be 659,055, while the eligible population of sexually active 20-29 year old women is 47,566 ( i.e., 50,070 x 0.95). Hence, the proportion of eligible persons in the population is 47,566/659,055 or 0.0722. The number of households in Niamey is 659,055/3.6 or 183,071 households. As stated in the problem, a reasonable assumption is that there is no more than one sexually active 20-29 years old woman per household. Thus the proportion of eligible households is 47,566/183,071 or 0.26. The 30 clusters are then selected from *nigerhiv.csf* with probability proportionate to size as shown in Figure *Csurvey PPS2*.

C-Survey Version 2.0

Working file: C:\NIGERHIV.CSF

Survey Parameter Cluster Data Cluster Selection Sample Size Random Number

Name of survey: Urban STD Survey of Women

Primary sampling unit: District

Size unit: Population

Ultimate sampling unit: Households

Eligible unit: Sexually active women, aged 20-29 years

Sample size

- Clusters: 30

- Households per cluster: 40

Other informations

Average no. of persons per HH: 3.60

Proportion of eligible persons: 0.0722

Proportion of eligible households: 0.2600

OK Cancel Print

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Csurvey PPS 1. Survey Parameter page for sampling from *nigerhiv.csf* file.

C-Survey Version 2.0

Working file: C:\NIGERHIV.CSF

Survey Parameter Cluster Data Cluster Selection Sample Size Random Number

Cluster Selected by PPS-VR Method Last selection: 05/15/2007 - 11:36:23

No.	District	Population Size*	#Cluster Selected	Number of HHs	#Eligible Person	#Eligible HHs	E_person/E_HHs
33	ComA_Dist33	3118	1	866	225	225	1.00
37	ComA_Dist37	3085	1	857	223	223	1.00
41	ComA_Dist41	3248	1	902	235	235	1.00
43	ComA_Dist43	3200	1	889	231	231	1.00
45	ComA_Dist45	3202	1	889	231	231	1.00
52	ComA_Dist52	3097	1	860	224	224	1.00
53	ComA_Dist53	3032	1	842	219	219	1.00
62	ComA_Dist62	2996	1	832	216	216	1.00
65	ComA_Dist65	3039	2	844	219	219	1.00
66	ComA_Dist66	3212	2	892	232	232	1.00
75	ComA_Dist75	3114	1	865	225	225	1.00
76	ComA_Dist76	3033	1	843	219	219	1.00
79	ComB_Dist1	3134	1	871	226	226	1.00
82	ComB_Dist4	3168	1	880	229	229	1.00
87	ComB_Dist9	3178	1	883	229	230	1.00

\* Persons in population as size unit

Run Print

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Csurvey PPS 2. Cluster selection page for selecting 30 clusters.

The first table in the following series shows the results for the population of 10,000 while the second of the following series shows the results for a sample survey of 1,200 (Data Set 1).

**Table 1.** Characteristics of sexually-active women, Niamey, Niger, 2008 (N=10,000).

Variable	No.	%	95% Confidence Limits
Age (in years)			
20-21	1,977	19.8	xx.x, xx.x
22-23	1,972	19.7	xx.x, xx.x
24-25	2,049	20.5	xx.x, xx.x
26-27	1,968	19.7	xx.x, xx.x
28-29	2,034	20.3	xx.x, xx.x
Age at first sexual intercourse			
< 15 years	3,000	30.0	xx.x, xx.x
≥ 15 years	7,000	70.0	xx.x, xx.x
Recent sex partner casual			
Yes	2,499	25.0	xx.x, xx.x
No	7,501	75.0	xx.x, xx.x
Consistent condom use with most recent partner			
Yes	1,137	11.4	xx.x, xx.x
No	8,863	88.6	xx.x, xx.x
HIV status (saliva test)			
Positive	381	3.8	x.x, x.x
Negative	9,619	96.2	xx.x, xx.x
Syphilis status (Rapid Syphilis Test)			
Positive	901	9.0	x.x, x.x
Negative	9,099	91.9	xx.x, xx.x

Table 1. Characteristics of sexually-active women, Niamey, Niger, 2008  
(n=1,200; **data set 1**).

Variable	No.	%	95% Confidence Limits
Age (in years)			
20-21	239	19.9	17.2, 22.9
22-23	236	19.7	17.4, 22.1
24-25	235	19.6	16.9, 22.6
26-27	226	18.8	17.3, 20.5
28-29	264	22.0	19.4, 24.9
Age at first sexual intercourse			
< 15 years	362	30.2	29.8, 30.5
≥ 15 years	838	69.8	69.5, 70.2
Recent sex partner casual			
Yes	326	27.2	24.7, 29.7
No	874	72.8	70.3, 75.3
Consistent condom use with most recent partner			
Yes	143	11.9	7.8, 16.0
No	1,057	88.1	84.0, 92.2
HIV status (saliva test)			
Positive	45	3.7	1.6, 5.9
Negative	1,155	96.3	94.1, 98.4
Syphilis status (Rapid Syphilis Test)			
Positive	113	9.4	6.4, 12.4
Negative	1,087	90.6	87.6, 93.6



## Estimated True Prevalence based on Sensitivity and Specificity of the Tests

$$\hat{P} = \frac{P' + SP - 1}{SE + SP - 1} = \text{estimated true prevalence}$$

N=10,000, true prevalence of HIV in population

$$\hat{P}_{SHIV} = \frac{.038 + .994 - 1}{.980 + .994 - 1} \times 100 = 3.30\%$$

N=10,000, true prevalence of syphilis in population

$$\hat{P}_{RST} = \frac{.090 + .952 - 1}{.750 + .952 - 1} \times 100 = 6.00\%$$

n=1,200, true prevalence of HIV in sample survey (95% CI, lo, **Data set 1**)

$$\hat{P}_{SHIV} = \frac{.016 + .994 - 1}{.980 + .994 - 1} \times 100 = 1.03\%$$

n=1,200, true prevalence of HIV in sample survey (95% CI, point estimate, **Data set 1**)

$$\hat{P}_{SHIV} = \frac{.0375 + .994 - 1}{.980 + .994 - 1} \times 100 = 3.23\%$$

n=1,200, true prevalence of HIV in sample survey (95% CI, hi, **Data set 1**)

$$\hat{P}_{SHIV} = \frac{.059 + .994 - 1}{.980 + .994 - 1} \times 100 = 5.44\%$$

*True HIV prevalence % in the sample survey = 3.23 (1.03, 5.44)*

n=1,200, true prevalence of syphilis in sample survey (95% CI, lo, **Data set 1**)

$$\hat{P}_{RST} = \frac{.064 + .952 - 1}{.750 + .952 - 1} \times 100 = 2.26\%$$

n=1,200, true prevalence of syphilis in sample survey (95% CI, point, **Data set 1**)

$$\hat{P}_{RST} = \frac{.094 + .952 - 1}{.750 + .952 - 1} \times 100 = 6.58\%$$

n=1,200, true prevalence of syphilis in sample survey (95% CI, hi, **Data set 1**)

$$\hat{P}_{RST} = \frac{.124 + .952 - 1}{.750 + .952 - 1} \times 100 = 10.89\%$$

*True syphilis prevalence % in the sample survey = 6.58 (2.26, 10.89)*

**Table 2.** Bivariate analysis of potential risk factors of syphilis and HIV, *Epi Info* and *Stata* software, Niamey, Niger, 2008 (N=10,000).

Tested associations	Prevalence Ratio (95% CI)*		Odds Ratio (95% CI)	
	<i>Epi Info</i>	<i>Stata</i>	<i>Epi Info</i>	<i>Stata</i>
Current syphilis infection				
Recent casual sex partner				
Yes	14.9 (xx.x, xx.x)	14.9 (xx.x, xx.x)	20.9 (xx.x, xx.x)	20.9 (xx.x, xx.x)
No	1.0 (ref.)**	1.0 (ref.)	1.0 (ref.)	1.0 (ref.)
Design effect***		x.x		x.x
Consistent condom use with most recent partner				
Yes	1.2 (x.x, x.x)	1.2 (x.x, x.x)	1.2 (x.x, x.x)	1.2 (x.x, x.x)
No	1.0 (ref.)	1.0 (ref.)	1.0 (ref.)	1.0 (ref.)
Design effect		x.x		x.x
Infected with HIV				
Yes	4.6 (x.x, x.x)	4.6 (x.x, x.x)	6.8 (x.x, x.x)	6.8 (x.x, x.x)
No	1.0 (ref.)	1.0 (ref.)	1.0 (ref.)	1.0 (ref.)
Design effect		x.x		x.x
Current HIV infection				
Recent casual sex partner				
Yes	5.8 (x.x, x.x)	5.8 (x.x, x.x)	6.3 (x.x, x.x)	6.3 (x.x, x.x)
No	1.0 (ref.)	1.0 (ref.)	1.0 (ref.)	1.0 (ref.)
Design effect		x.x		x.x
Consistent condom use with most recent partner				
Yes	1.3 (x.x, x.x)	1.3 (x.x, x.x)	1.3 (x.x, x.x)	1.3 (x.x, x.x)
No	1.0 (ref.)	1.0 (ref.)	1.0 (ref.)	1.0 (ref.)
Design effect		x.x		x.x

\* 95% confidence interval

\*\* reference or comparison group for prevalence or odds ratio analysis

\*\*\* design effect compares the variance of the two-stage cluster survey analysis to a same-sized analysis if a simple random sample

**Table 2.** Bivariate analysis of potential risk factors of syphilis and HIV, *Epi Info* and *Stata* software, Niamey, Niger, 2008 (n=1,200; **data set 1**).

Tested associations	Prevalence Ratio (95% CI)*		Odds Ratio (95% CI)	
	<i>Epi Info</i>	<i>Stata</i>	<i>Epi Info</i>	<i>Stata</i>
Current syphilis infection				
Recent casual sex partner				
Yes	15.1 (4.8, 47.4)	15.1 (4.8, 47.4)	21.0 (6.1, 72.6)	21.0 (6.1, 72.6)
No	1.0 (ref.)**	1.0 (ref.)	1.0 (ref.)	1.0 (ref.)
Design effect***		4.8		4.9
Consistent condom use with most recent partner				
Yes	1.4 (0.6, 3.4)	1.4 (0.6, 3.4)	1.5 (0.5, 4.0)	1.5 (0.5, 4.0)
No	1.0 (ref.)	1.0 (ref.)	1.0 (ref.)	1.0 (ref.)
Design effect		3.2		3.2
Infected with HIV				
Yes	5.9 (3.3, 10.4)	5.9 (3.3, 10.4)	10.1 (3.8, 27.1)	10.1 (3.8, 27.1)
No	1.0 (ref.)	1.0 (ref.)	1.0 (ref.)	1.0 (ref.)
Design effect		2.3		2.3
Current HIV infection				
Recent casual sex partner				
Yes	6.6 (2.7, 15.9)	6.6 (2.7, 15.9)	7.2 (2.9, 17.9)	7.2 (2.9, 17.9)
No	1.0 (ref.)	1.0 (ref.)	1.0 (ref.)	1.0 (ref.)
Design effect		1.8		1.8
Consistent condom use with most recent partner				
Yes	1.1 (0.3, 4.0)	1.1 (0.3, 4.0)	1.1 (0.3, 4.2)	1.1 (0.3, 4.2)
No	1.0 (ref.)	1.0 (ref.)	1.0 (ref.)	1.0 (ref.)
Design effect		2.0		2.0

\* 95% confidence interval

\*\* reference or comparison group for prevalence or odds ratio analysis

\*\*\* design effect comparisons the variance of the two-stage cluster survey analysis to a same-sized analysis if a simple random sample

**Table 3a.** Multivariate analysis of potential risk factors of syphilis and HIV, *Stata* software, Niamey, Niger, 2008 (N=10,000).

Tested associations	Prevalence Ratio (95% CI)*	Odds Ratio (95% CI)
Current syphilis infection		
Recent casual sex partner		
Yes	14.9 (xx.x, xx.x)	20.9 (xx.x, xx.x)
No	1.0 (ref.)**	1.0 (ref.)
Design effect***	x.x	x.x
Recent casual sex partner, controlling for age at first sexual intercourse		
Yes	14.9 (xx.x, xx.x)	20.8 (xx.x, xx.x)
No	1.0 (ref.)	1.0 (ref.)
Design effect	x.x	x.x
Recent casual sex partner, controlling for current age and age at first sexual intercourse		
Yes	14.9 (xx.x, xx.x)	20.8 (xx.x, xx.x)
No	1.0 (ref.)	1.0 (ref.)
Design effect	x.x	x.x
Consistent condom use with most recent partner		
Yes	1.2 (xx.x, xx.x)	1.2 (xx.x, xx.x)
No	1.0 (ref.)	1.0 (ref.)
Design effect	x.x	x.x
Consistent condom use with most recent partner, controlling for age at first sexual intercourse		
Yes	0.9 (xx.x, xx.x)	0.9 (xx.x, xx.x)
No	1.0 (ref.)	1.0 (ref.)
Design effect	x.x	x.x
Consistent condom use with most recent partner, controlling for age at first sexual intercourse and recent sexual partner being a casual partner		
Yes	0.5 (xx.x, xx.x)	0.4 (xx.x, xx.x)
No	1.0 (ref.)	1.0 (ref.)
Design effect	x.x	x.x

\* 95% confidence interval

\*\* reference or comparison group for prevalence or odds ratio analysis

\*\*\* design effect compares the variance of the two-stage cluster survey analysis to a same-sized analysis if a simple random sample

**Table 3a.** Multivariate analysis of potential risk factors of syphilis and HIV, *Stata* software, Niamey, Niger, 2008 (n=1,200; **data set 1**).

Tested associations	Prevalence Ratio (95% CI)*	Odds Ratio (95% CI)
Current syphilis infection		
Recent casual sex partner		
Yes	15.1 (4.8, 47.4)	21.0 (6.1, 72.6)
No	1.0 (ref.)**	1.0 (ref.)
Design effect***	4.8	4.9
Recent casual sex partner, controlling for age at first sexual intercourse		
Yes	13.4 (4.0, 44.9)	17.9 (4.8, 67.3)
No	1.0 (ref.)	1.0 (ref.)
Design effect	4.4	4.4
Recent casual sex partner, controlling for current age and age at first sexual intercourse		
Yes	13.5 (4.0, 45.2)	18.1 (4.8, 68.0)
No	1.0 (ref.)	1.0 (ref.)
Design effect	4.4	4.4
Consistent condom use with most recent partner		
Yes	1.4 (0.6, 3.4)	1.5 (0.5, 4.0)
No	1.0 (ref.)	1.0 (ref.)
Design effect	3.2	3.2
Consistent condom use with most recent partner, controlling for age at first sexual intercourse		
Yes	1.0 (0.4, 2.3)	1.0 (0.4, 2.7)
No	1.0 (ref.)	1.0 (ref.)
Design effect	2.6	2.6
Consistent condom use with most recent partner, controlling for age at first sexual intercourse and recent sexual partner being a casual partner		
Yes	0.6 (0.2, 1.3)	0.5 (0.2, 1.3)
No	1.0 (ref.)	1.0 (ref.)
Design effect	2.9	2.7

\* 95% confidence interval

\*\* reference or comparison group for prevalence or odds ratio analysis

\*\*\* design effect compares the variance of the two-stage cluster survey analysis to a same-sized analysis if a simple random sample

**Table 3b.** Multivariate analysis of potential risk factors of syphilis and HIV, *Stata* software, Niamey, Niger, 2008 (N=10,000).

Tested associations	Prevalence Ratio (95% CI)*	Odds Ratio (95% CI)
Current syphilis		
Infected with HIV		
Yes	4.6 (x.x, x.x)	6.8 (x.x, x.x)
No	1.0 (ref.)**	1.0 (ref.)
Design effect***	x.x	x.x
Infected with HIV, controlling for recent casual sex partner and consistent condom use with most recent partner		
Yes	1.8 (x.x, x.x)	2.7 (x.x, x.x)
No	1.0 (ref.)**	1.0 (ref.)
Design effect	x.x	x.x

\* 95% confidence interval

\*\* reference or comparison group for prevalence or odds ratio analysis

\*\*\* design effect comparisons the variance of the two-stage cluster survey analysis to a same-sized analysis if a simple random sample

**Table 3b.** Multivariate analysis of potential risk factors of syphilis and HIV, *Stata* software, Niamey, Niger, 2008 (n=1,200; data set 1).

Tested associations	Prevalence Ratio (95% CI)*	Odds Ratio (95% CI)
Current syphilis		
Infected with HIV		
Yes	5.9 (3.3, 10.4)	10.1 (3.8, 27.1)
No	1.0 (ref.)**	1.0 (ref.)
Design effect***	2.3	2.3
Infected with HIV, controlling for recent casual sex partner and consistent condom use with most recent partner		
Yes	2.3 (1.4, 4.0)	4.5 (1.4, 14.6)
No	1.0 (ref.)**	1.0 (ref.)
Design effect	2.6	2.9

\* 95% confidence interval

\*\* reference or comparison group for prevalence or odds ratio analysis

\*\*\* design effect comparisons the variance of the two-stage cluster survey analysis to a same-sized analysis if a simple random sample

**Table 3c.** Multivariate analysis of potential risk factors of syphilis and HIV, *Stata* software, Niamey, Niger, 2008 (N=10,000).

Tested associations	Prevalence Ratio (95% CI)*	Odds Ratio (95% CI)
Current HIV infection		
Recent casual sex partner		
Yes	5.8 (x.x, x.x)	6.3 (x.x, x.x)
No	1.0 (ref.)**	1.0 (ref.)
Design effect***	x.x	x.x
Recent casual sex partner, controlling for age at first sexual intercourse		
Yes	5.1 (x.x, x.x)	5.6 (x.x, x.x)
No	1.0 (ref.)**	1.0 (ref.)
Design effect	x.x	x.x
Recent casual sex partner, controlling for current age and age at first sexual intercourse		
Yes	5.1 (x.x, x.x)	5.6 (x.x, x.x)
No	1.0 (ref.)**	1.0 (ref.)
Design effect	x.x	x.x
Consistent condom use with most recent partner		
Yes	1.3 (x.x, x.x)	1.3 (x.x, x.x)
No	1.0 (ref.)**	1.0 (ref.)
Design effect	x.x	x.x
Consistent condom use with most recent partner, controlling for age at first sexual intercourse		
Yes	1.0 (x.x, x.x)	1.0 (x.x, x.x)
No	1.0 (ref.)**	1.0 (ref.)
Design effect	x.x	x.x
Consistent condom use with most recent partner, controlling for age at first sexual intercourse and recent sexual partner being a casual partner		
Yes	0.6 (x.x, x.x)	0.6 (x.x, x.x)
No	1.0 (ref.)**	1.0 (ref.)
Design effect	x.x	x.x

\* 95% confidence interval

\*\* reference or comparison group for prevalence or odds ratio analysis

\*\*\* design effect compares the variance of the two-stage cluster survey analysis to a same-sized analysis if a simple random sample

**Table 3c.** Multivariate analysis of potential risk factors of syphilis and HIV, *Stata* software, Niamey, Niger, 2008 (n=1,200; **data set 1**).

Tested associations	Prevalence Ratio (95% CI)*	Odds Ratio (95% CI)
Current HIV infection		
Recent casual sex partner		
Yes	6.6 (2.4, 15.9)	7.2 (2.9, 17.9)
No	1.0 (ref.)**	1.0 (ref.)
Design effect***	1.8	1.8
Recent casual sex partner, controlling for age at first sexual intercourse		
Yes	5.1 (2.6, 10.1)	5.5 (2.7, 11.2)
No	1.0 (ref.)**	1.0 (ref.)
Design effect	1.1	1.1
Recent casual sex partner, controlling for current age and age at first sexual intercourse		
Yes	5.2 (0.3, 4.0)	1.1 (0.3, 4.2)
No	1.0 (ref.)**	1.0 (ref.)
Design effect	2.0	2.0
Consistent condom use with most recent partner		
Yes	1.3 (x.x, x.x)	1.3 (x.x, x.x)
No	1.0 (ref.)**	1.0 (ref.)
Design effect	x.x	x.x
Consistent condom use with most recent partner, controlling for age at first sexual intercourse		
Yes	0.8 (0.3, 2.7)	0.8 (0.2, 2.9)
No	1.0 (ref.)**	1.0 (ref.)
Design effect	1.8	1.8
Consistent condom use with most recent partner, controlling for age at first sexual intercourse and recent sexual partner being a casual partner		
Yes	0.5 (0.2, 1.8)	0.5 (0.1, 1.9)
No	1.0 (ref.)**	1.0 (ref.)
Design effect	1.8	1.8

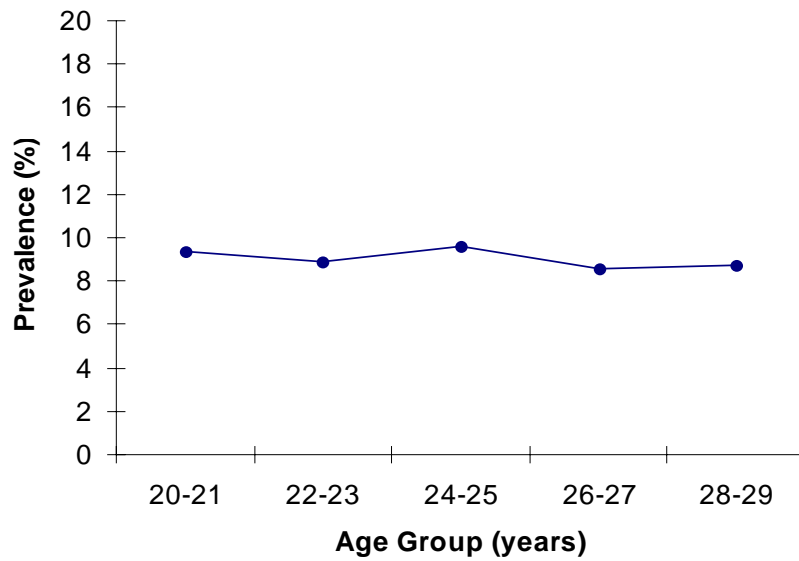
\* 95% confidence interval

\*\* reference or comparison group for prevalence or odds ratio analysis

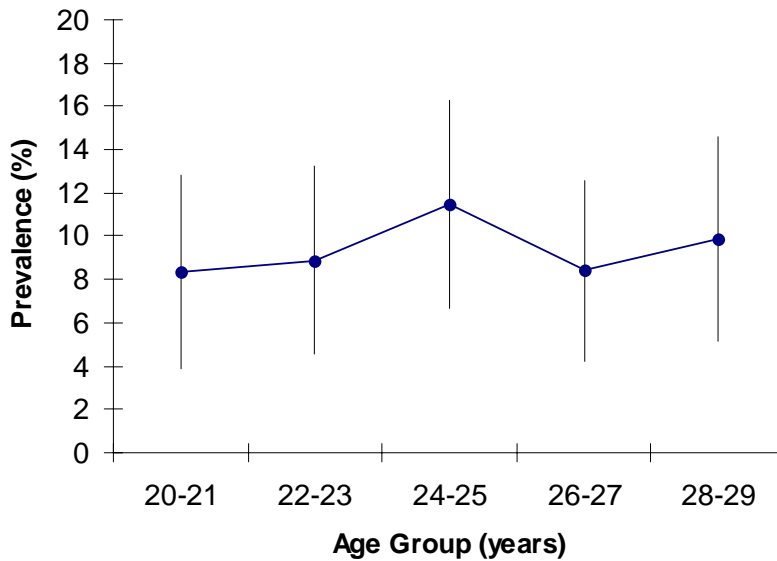
\*\*\* design effect compares the variance of the two-stage cluster survey analysis to a same-sized analysis if a simple random sample



Two figures were asked for in the analysis, one showing the prevalence of syphilis (modified via email on 5/12/08) by age and the other the prevalence of HIV infection (modified via email on 5/12/08) by age of first sexual intercourse.



**Figure 1.** Prevalence of syphilis by age, Niamey, Niger, 2008 (N=10,000)



**Figure 1.** Prevalence and 95% confidence limits of syphilis by age, Niamey, Niger, 2008 (n=1,200; dataset 1)



**Figure 2.** Prevalence of HIV by age at first sexual intercourse, Niamey, Niger, 2008 (N=10,000)



**Figure 2.** Prevalence of HIV and 95% confidence limits by age at first sexual intercourse, Niamey, Niger, 2008 (n=1,200; **dataset 1**)