

SUPPLEMENTARY FILE

Supplementary Methods

Covariate Variables

We included the following demographic covariates: age group (18-24, 25-39, 40+ years), country of birth (born in Ireland, born outside Ireland), area of residence (Dublin, outside Dublin), education level (degree level or higher, lower than degree level), employment status (employed, unemployed, student, other). Other variables included: sexual identity (gay, bisexual, straight/other); outness (out to all/almost all, more than half, less than half, few, none); HIV testing history (tested positive, last test negative less than 12 months ago, last test negative more than 12 months ago, never tested); history of an STI in the last 12 months (no/don't know, yes) and knowledge of HIV status (sure of status, unsure of status).

Infographics

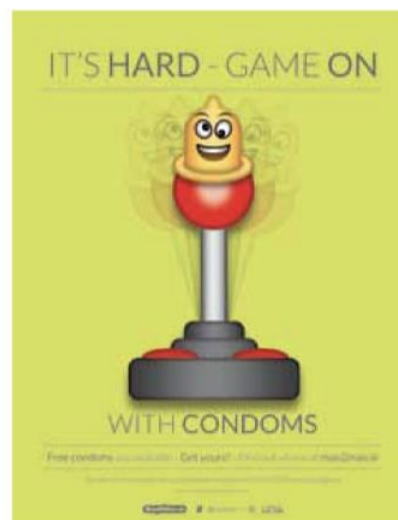
Infographic 1: Hepatitis B



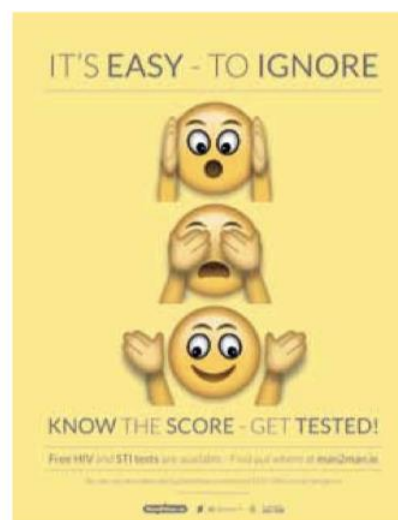
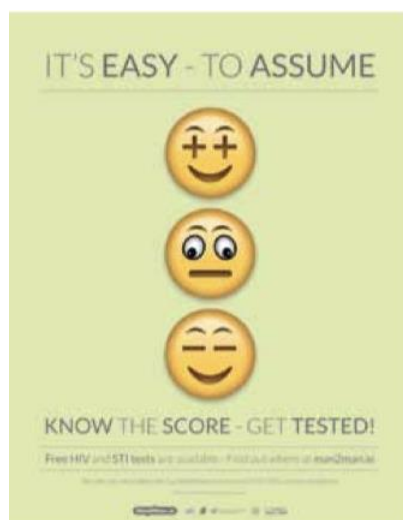
Infographic 2: Gonorrhoea



Infographic 3: Condom use



Infographic 4: HIV/STI testing



Supplementary Results

Secondary Outcome Measure

The secondary analysis included 3,017 participants who answered all six questions about HIV/STI transmission (Table 4). From the multivariable analysis, significantly lower levels of knowledge were identified among those aged 18-24 years (aOR 1.41 95%CI 1.09-1.82), those educated below degree level (aOR 1.37 95%CI 1.16-1.62), those born in Ireland (aOR 1.60 95%CI 1.26-2.02) and students (aOR 1.35 95%CI 1.07-1.71). Furthermore, lower knowledge was identified among those who were unsure of their HIV status (aOR 1.31 95%CI 1.11-1.55), those out to few of their contacts (aOR 1.29 95%CI 1.01-1.64), those who never tested for HIV (aOR 2.01 95%CI 1.64-2.345) and those who had never visited the Man2Man health promotion website (aOR 1.86 95%CI 1.53-2.27).

Supplementary Tables

Supplemental Table 1: Breakdown of responses for each knowledge statement

Statement Number	I Knew this already	I was not sure about this	I did not know this already	I did not know this already	I do not understand this
1	2823	57	12	7	6
2	2794	57	20	12	22
3	2839	44	11	2	9
4	2354	325	199	5	22
5	2706	142	22	3	32
6	2723	134	38	4	6
7	1970	523	284	19	109
8	2232	457	151	3	62
9	2391	385	115	1	13
10	2745	110	37	5	8
11	2387	367	140	4	7
12	1587	549	723	19	27
13	1865	598	397	13	32

Supplemental Table 2: Number of men knowing each number of knowledge statements

Number of Statements known	Number of Men (%)	Cumulative %
0	3 (<1)	<1
1	6 (<1)	<1
2	8 (<1)	<1
3	17 (<1)	1
4	21 (<1)	2
5	38 (1)	3
6	64 (2)	5
7	108 (4)	9
8	156 (5)	14
9	281 (10)	24
10	353 (12)	36
11	461 (16)	52
12	506 (17)	70
13	883 (30)	100

Supplemental Table 3: Univariable and multivariable analysis of lower knowledge of HIV and STI transmission among MSM in Ireland, MISI 2015

	Number with Lower Knowledge (%)	Univariable Analysis			Multivariable Analysis		
		OR	95% Confidence Interval	P Value	aOR	95% Confidence Interval	P Value
Age group (years)							
>40	305 (37)	1	Ref	-	1	Ref	-
25-39	472 (38)	1.03	(0.86-1.24)	0.731	1.17	(0.95-1.43)	0.137
18-24	515 (55)	2.05	(1.69-2.48)	<0.001	1.41	(1.09-1.82)	0.009
Education							
Degree or higher	575 (36)	1	Ref	-	1	Ref	-
Less than degree	685 (50)	1.80	(1.55-2.08)	<0.001	1.37	(1.16-1.62)	<0.001
Area of Residence *							
Dublin	537 (39)	1	Ref	-	1	Ref	-
Outside Dublin	679 (47)	1.39	(1.20-1.62)	<0.001	1.04	(0.88-1.23)	0.633
Missing	76 (37)	0.92	(0.68-1.24)	0.582	0.81	(0.59-1.13)	0.214
Employment							
Employed	731 (38)	1	Ref	-	1	Ref	-
Unemployed	100 (50)	1.63	(1.22-2.18)	0.001	1.29	(0.94-1.76)	0.117
Student	374 (55)	2.07	(1.73-2.47)	<0.001	1.35	(1.07-1.71)	0.01
Other ^ψ	56 (44)	1.29	(0.90-1.86)	0.161	1.35	(0.91-2.00)	0.136
Country Born							
Outside Ireland	136 (32)	1	Ref	-	1	Ref	-
Ireland	1150 (45)	1.70	(1.37-2.12)	<0.001	1.60	(1.26-2.02)	<0.001
Sexual Identity							
Gay	963 (41)	1	Ref	-	1	Ref	-
Bisexual	196 (49)	1.39	(1.06-1.83)	0.018	0.91	(0.70-1.18)	0.487
Straight/Other	111 (49)	1.59	(0.86-2.92)	0.139	0.87	(0.64-1.18)	0.368
Outness Level							
Out to all/almost all	569 (38)	1	Ref	-	1	Ref	-
More than Half	196 (45)	1.34	(1.08-1.66)	0.008	1.19	(0.94-1.49)	0.149
Less than Half	111 (42)	1.20	(0.92-1.57)	0.177	0.99	(0.74-1.33)	0.968
Few	236 (50)	1.64	(1.34-2.03)	<0.001	1.29	(1.01-1.64)	0.04
None	140 (54)	1.94	(1.48-2.52)	<0.001	1.34	(0.97-1.85)	0.073
HIV Testing History							
Negative <12 months	374 (33)	1	Ref	-	1	Ref	-
Negative >12 months	226 (37)				1.08	(0.86-1.34)	0.505
Positive	26 (17)	0.41	(0.26-0.63)	<0.001	0.49	(0.31-0.77)	0.002
Never Tested	655 (60)	2.88	(2.46-3.36)	<0.001	2.01	(1.64-2.35)	<0.001
STI in last 12m							
No/Don't Know	1200 (44)	1	Ref	-	1	Ref	-
Yes	84 (30)	0.53	(0.41-0.69)	<0.001	0.85	(0.63-1.13)	0.261
Certainty re HIV Status							
Sure of HIV Status	803 (40)	1	Ref	-	1	Ref	-
Unsure of HIV Status	480 (49)	1.46	(1.25-1.70)	<0.001	1.31	(1.11-1.55)	0.001
Visited Man2Man Website							
Visited	230 (29)	1	Ref	-	1	Ref	-
Not visited	1034 (47)	2.16	(1.81-2.57)	<0.001	1.86	(1.53-2.27)	<0.001
Viewed one or more HP Infographics+							
Viewed	584 (38)	1	Ref	-	1	Ref	-
Not Viewed	668 (47)	1.44	(1.25-1.67)	<0.001	1.17	(0.99-1.39)	0.063

*Variable with >5% missing data

^ψ Other includes: retired; sick leave; medically retired & other

+HP, health promotion

Supplemental Table 4: Univariable and multivariable sensitivity analysis of lower knowledge of HIV and STI transmission, testing and treatment among HIV negative MSM in Ireland, MISI 2015

	Number with Lower Knowledge (%)	Univariable Analysis			Multivariable Analysis		
		OR	95% Confidence Interval	P Value	aOR	95% Confidence Interval	P Value
Age group (years)							<0.001
>40	226 (31)	1	Ref	-	1	Ref	-
25-39	350 (31)	0.97	(0.79 – 1.19)	0.77	1.27	(1.01 – 1.60)	0.04
18-24	466 (51)	2.32	(1.89 – 2.85)	<0.001	2.02	(1.52 – 2.67)	<0.001
Education							<0.001
Degree or higher	422 (29)	1	Ref	-	1	Ref	-
Less than a degree	597 (48)	2.23	(1.90 – 2.61)	<0.001	1.62	(1.35 – 1.93)	<0.001
Area of Residence *							0.072
Dublin	397 (32)	1	Ref	-	1	Ref	-
Outside Dublin	584 (44)	1.68	(1.43 – 1.97)	<0.001	1.20	(1.00 – 1.44)	0.042
Missing	61 (36)	1.20	(0.86 – 1.67)	0.29	1.02	(0.71 – 1.47)	0.90
Employment							0.14
Employed	570 (32)	1	Ref	-	1	Ref	-
Unemployed	81 (46)	1.77	(1.29 – 2.41)	<0.001	1.20	(0.85 – 1.69)	0.30
Student	321 (50)	2.10	(1.75 – 2.52)	<0.001	1.10	(0.86 – 1.42)	0.43
Other ^ψ	49 (43)	1.62	(1.10 – 2.38)	0.01	1.67	(1.09 – 2.55)	0.019
Country of Birth							<0.001
Outside Ireland	104 (27)	1	Ref	-	1	Ref	-
Ireland	933 (40)	1.78	(1.40 – 2.26)	<0.001	1.62	(1.25 – 2.11)	<0.001
Sexual Identity							0.72
Gay	748 (35)	1	Ref	-	1	Ref	-
Bisexual	184 (48)	1.70	(1.37 – 2.12)	<0.001	1.01	(0.77 – 1.32)	0.96
Straight/Other	95 (45)	1.53	(1.15 – 2.04)	0.004	0.83	(0.59 – 1.16)	0.27
Outness Level							0.004
Out to all/almost all	425 (32)	1	Ref	-	1	Ref	-
More than Half	153 (38)	1.31	(1.04 – 1.66)	0.02	1.15	(0.89 – 1.48)	0.29
Less than Half	92 (37)	1.29	(0.97 – 1.71)	0.08	1.03	(0.76 – 1.42)	0.84
Few	206 (46)	1.88	(1.51 – 2.34)	<0.001	1.43	(1.10 – 1.85)	0.007
None	136 (54)	2.53	(1.92 – 3.32)	<0.001	1.76	(1.26 – 2.47)	<0.001
HIV Testing History							<0.001
Negative in < 12 months	267 (25)	1	Ref	-	1	Ref	-
Negative in > 12 months	166 (28)	1.22	(0.98 – 1.54)	0.08	1.14	(0.89 – 1.46)	0.30
Never Tested	598 (56)	3.96	(3.30 – 4.76)	<0.001	2.30	(1.86 – 2.85)	<0.001
STI in last 12m							0.63
No/Don't Know	978 (39)	1	Ref	-	1	Ref	-
Yes	57 (24)	0.49	(0.36 – 0.67)	<0.001	0.85	(0.60 – 1.19)	0.33
Certainty of HIV Status							0.001
Sure of HIV Status	636 (35)	1	Ref	-	1	Ref	-
Unsure of HIV Status	399 (43)	1.38	(1.17 – 1.62)	<0.001	1.34	(1.12 – 1.60)	0.001
Visited Man2Man Website							<0.001
Visited	173 (24)	1	Ref	-	1	Ref	-
Not visited	847 (42)	2.28	(1.88 – 2.76)	<0.001	1.87	(1.50 – 2.33)	<0.001
Viewed one or more HP Infographics+							0.07
Viewed	460 (33)	1	Ref	-	1	Ref	-
Not Viewed	545 (42)	1.46	(1.25 – 1.71)	<0.001	1.16	(0.96 – 1.39)	0.12

*Variable with >5% missing data

^ψ Other includes: retired; sick leave; medically retired & other

+HP, health promotion

Supplemental Table 5: Baseline characteristics of study sample and excluded men

Age		
18-24	914 (31)	51 (28)
25-39	1205 (42)	71 (38)
>40	786 (27)	63 (34)
Education		
Degree	1541 (53)	85 (46)
Less than a Degree	1306 (45)	91 (49)
Missing	58 (2)	9 (5)
Employment		
Employed	1882 (65)	110 (59)
Unemployed	190 (7)	15 (8)
Student	653 (22)	40 (22)
Other ψ	122 (4)	12 (7)
Missing	52 (2)	8 (4)
Area of Residence *		
Dublin	1329 (46)	67 (36)
Outside Dublin	1392 (48)	87 (47)
Missing	184 (6)	31 (17)
Country of Birth		
Ireland	2478 (85)	161 (87)
Outside Ireland	413 (14)	17 (9)
Missing	14 (<1)	7 (4)
Sexual Identity		
Gay	2261 (78)	150 (81)
Bisexual	389 (13)	17 (9)
Straight/Other	217 (8)	13 (7)
Missing	38 (1)	5 (3)
Outness Level		
Out to all/Almost all	1439 (50)	92 (50)
More than half	421 (14)	28 (15)
Less than half	259 (9)	15 (8)
Few	463 (16)	19 (10)
None	253 (9)	14 (8)
Missing	70 (2)	17 (9)
HIV Status		
HIV positive	142 (5)	10 (5)
HIV negative <12m	1088 (38)	75 (41)
HIV negative >12m	592 (20)	34 (18)
Never Tested	1062 (36)	61 (33)
Missing	21 (1)	5 (3)
STI in last 12m		
No/Don't Know	2611 (90)	162 (87)
Yes	273 (9)	16 (9)
Missing	21 (1)	7 (4)
Certainty of HIV Status		
Sure of Status	938 (32)	72 (39)
Unsure of Status	1953 (68)	111 (60)
Missing	14 (<1)	2 (1)
Visited Man2Man		
Visited	757 (26)	41 (22)
Not visited	2099 (72)	132 (71)
Missing	49 (2)	12 (7)
Viewed HP Infographics		
Viewed	1466 (50)	96 (52)
Not Viewed	1361 (47)	74 (40)
Missing	78 (3)	15 (8)

We excluded 185 men who did not answer all 13 questions relating to HIV/STI treatment, transmission and testing

*Variable with >5% missing data

ψ Other includes: retired; sick leave; medically retired & other