3.2 Intervention targeting Men who have Sex with Men (MSM):

MSM represent the largest category for HIV infection in many developed countries and continue to be at great risk for HIV infection. Most of interventions study to reduce risky sexual behaviors among MSM have been conducted within the arena of HIV prevention, and have targeted diverse groups within MSM [42].

The effectiveness of HIV/STI preventive interventions targeted at MSM has been assessed in various publications. Most recently, a systematic Cochrane review [42] to reduce risk for sexual transmission of HIV among MSM. This review included 58 randomized controlled trials (RCT), of which almost three quarters were from the United States (US). The review concluded that behavioral interventions reduced UAI by 27% compared to minimal or no HIV preventive intervention. A number of other reviews have examined the effectiveness of HIV prevention interventions, and most of these were specific to MSM. Further, the majority of reviews have neither used a comprehensive search strategy nor clear inclusion criteria, and many of the reviews are out of date, having been published before or shortly after the year 2000, highlighting the need for a systematic review that incorporates explicit inclusion criteria and that updates the current knowledge base about HIV/STI preventive interventions targeted at MSM in Europe [42]

Prior to this, reviews of interventions to reduce risky sexual behavior and to prevent HIV transmission have been conducted across a broad range of population at risk. One of these reviews indicate that there is a paucity of research on interventions for MSM of color, young MSM, and MSM who do not identify themselves as gay [43].

Furthermore, the reviews of the research indicated that critical intervention components include information, motivation and skills training, with successful interventions having high attendance rates or including an extensive formative research component [42,43]. One review found diminishing effects of interventions as follow-up time increased from 1 month to 6 months. In parallel, another review indicated that community-level interventions were effective to reach people who would not participate in facility-based interventions and who may be actually be at higher risk compared to those who attend enroll in small-group or facility-based interventions [42].

However, there is a need to summarize and analyze the lessons learned in HIV prevention for MSM. This is a brief outline of the Cochrane review [2] that summarizes the behavioral effects of interventions designed to reduce risky sexual behaviors and prevent HIV transmission among MSM in developed settings, including Europe, USA, and Australia.

Summary of findings

This brief review examined controlled trials designed to reduce risky sexual behaviors among MSM. The studies included in this review examined individual-level, community-level and small-group interventions. The interventions were designed to reduce unprotected sex and included individual counselling, and social behavioral support such as peer education. Interventions that targeted communities and small groups included group counselling, workshop, training community leaders.

Overall, the results for the effectiveness of interventions for MSM within the arena of HIV prevention indicate that such interventions could reduce risky sexual behaviors, subsequently reduce the risk of sexually transmitted infections.

The summary effect of these diverse interventions indicates that 23% fewer men reported unprotected anal sex (one of the riskiest behaviors for transmission of HIV and other sexually transmitted infections) after receiving intervention. It is of note to report that the risk reduction observed across the trials occurred after relatively short interventions. Findings suggest that community-level interventions reached and influenced substantial proportions of the study population, whether through direct exposure to the formal intervention mechanisms or by informal social diffusion, and these interventions were at least as favorable as those of small-group and individual-level interventions. The present analysis also confirmed that interventions that promote personal skills yielded clearly favorable effects.

Policy considerations

Reduction in unprotected anal sex and sexually transmitted diseases can have an important public health impact. Among interventions, community-level interventions, those that served populations in their twenties (rather than their thirties) and those that promoted interpersonal skills have yielded slightly more favorable results. The reduction in risk would likely be even greater if intervention efforts could be guided

towards the most effective strategies. There are a small number of rigorous controlled trials for MSM, which are not compensated by a large number of study group participants. Thus, more research is needed to ascertain the effects of specific intervention components, population characteristics and methodological features and to identify the best intervention strategies.

In Europe, there is still little behavioral HIV/STI prevention interventions have been rigorously evaluated, and the paucity of controlled studies underscores the needs for more research in this area. While there is no other reliable substitute for evaluating the effect of interventions than controlled trials, other designs such as interrupted time series designs can also be used. Researchers who are concerned about the ethics of allocation to experimental groups can use waiting list controls whereby the control group receives the potential beneficial intervention post data collection. The drawback is the difficulty of establishing long-term effectiveness of the intervention. It also remains important to integrate process assessment into the evaluation design in order to learn about feasibility, acceptability, practical constraints, and related issues. Implementation and adherence are typically difficult to measure in multi component intervention programmes, but provide critical information. For example, Elford et al. [43] process evaluation helped explain the likely reasons for lack of programme effectiveness. Researchers and journal editors should strive to disseminate also null findings and related issues in intervention research [44]

Sample of studies selected in the Cochrane review of behavioral intervention of MSM [44				
Authors	Setting and study sample	Study design	Comparison group	Program implementers
Herbst (2005) [45]	USA,* Puerto Rico, Canada, Mexico, England, Scotland, New Zealand, Australia, Brazil, Russia, Bulgaria	Individual, group† and community interventions		Theoretical basis Interpersonal-skills training Skills training delivered by role plays or lectures Multiple delivery methods Greater intervention exposure complexity (number of sessions, duration and time span)
Johnson	USA,* Australia, New	Individual,		Community interventions

(2002) [46]	Zealand, Canada	group † and community interventions		Targeting young populations Interpersonal-skills training
Rees (2004) [47]	USA, UK*	Complex interventions multiple techniques: counselling, workshops, peer involvement, and social marketing		Peer-led community based interventions had implementation problems (recruitment and retention of peer educators); indicative of difficulty in transferring an intervention from one context (USA) to another (UK)
Carballo-Diéguez 2005 [48]	141 Latino MSM in New York	RCT	wait list control	8 sessions on themes of oppression, transgression of rules, excuses (or rationalizations), substance use, goal setting, the role of pleasure, self-efficacy and plans for the future.
Dilley 2002 [49]	138 MSM, San Francisco, 1997-2000	RCT		Individual standard counseling (ISC, one 1-hr session) plus self-justifications (SJ) session, where the client reviewed and challenged his own self-justifications for a recent occasion of unsafe sex, AND diary of sexual activity for 90 days
Dilley 2007 [50]	305 MSM attending San Francisco HIV CT clinic, 2002-04	RCT	Control received usual CT only	Individual personalized cognitive counseling by a paraprofessional along with usual CT
Explore 2004	3775 MSM in 6 US	RCT		Ten 1-on-1 counseling

[51]	cities 1999-2003			sessions followed by maintenance sessions every 3mo. Risk assessment, sexual communication, knowledge of HIV serostatus, alcohol and drug use, triggers for unsafe sex, motivational interviewing. Total span up to 48 months.
Healthy Living 2007 [52]	936 HIV+ people in Los Angeles, Milwaukee, New York, and San Francisco. 57% were MSM	RCT	Wait list	Individual level. 15 90-minute sessions in 3modules: stress, coping, adjustment; safer behaviors; and health behaviors
Harding 2004 [53]	19 MSM in London 2000	RCT	Wait list	'SM sex: an introduction to the SM scene'. Sessions address assumptions and knowledge, practical tools of SM sex, risk taking, emotional aspects, sexually transmitted infections and HIV transmission, rights and responsibilities, legal issues, the role of fantasy, and limits and boundaries. Up to 25 group members, 4 sessions of 7 hrs
Imrie 2001 [54]	252 gay men attending a sexual health clinic with acute STI or unprotected sex in past year. London 1995-98	RCT	Standard management only	Gay Men Project: standard mgt (1-to-1 counseling & referrals, 20 minutes) plus 1-day small group workshop
Kalichman 2001 [55]	164 MSM with HIV (62% of participants were MSM, 74% African Americans), Atlanta 1997	RCT	Support group for health	Support group to create sexual health and relationship plans, develop

			maintenance. Five 120-min sessions	communication and disclosure skills, learn hazards of co-infection with other STI. Five 120-min sessions
Patterson 2003 [56]	USA	RCT	Three 90-min sessions on diet and exercise	Booster-enhanced social cognitive intervention in 3 domains (condom use, negotiation of safer sex, disclosure of HIV status). One 90-min comprehensive session plus two 90-min booster sessions
Read 2006 [57]	110 MSM age 18+ who receive HIV negative test results at the Hollywood gay service center [year?]	RCT	Peer counseling only	Individual level. Interactive video (IAV) with peer counseling vs peer counseling alone.
Richardson 2004 [58]	402 MSM patients at 6 HIV treatment clinics, California 1999	2 clinics were assigned to each of 3 conditions gain frame (G), loss frame (L) or control	2 attention-control clinics were assigned to medication adherence intervention	Two clinics assigned to use a gain-framed approach (G) (positive consequences of safer-sex). Prevention counseling from medical providers supplemented with written information
Shoptaw 2005 [59]	162 meth-dependent MSM in Los Angeles, 1998-2000	RCT		CBT+CR: both treatments simultaneously.

References

1. PerformWell. Available at www.performwell.org/index.php/identify-outcomes/health-and-safety/10-indicators/133-risky-sexual-behavior.
2. Kevin A Fenton, Anne M Johnson, Sally McManus, Bob Erens. Measuring sexual behaviour: methodological challenges in survey research. *Sex Transm Inf* 2001;**77**:84–92.
3. Michael H Merson, Jeff rey O'Malley, David Serwadda, Chantawipa Apisuk. The history and challenge of HIV prevention. Lancet 2008; 372: 475–88.
4. Wellings K, Collumbien M, Slaymaker E, Singh S Hodges Z, Patel D, Bajos N. Sexual behavior in context: a global perspective. Lancet 2006; 368: 1706-1728
5. Currie C et al (eds) Young people's health in context: international report from the Health Behavior in School-aged Children (HBSC) 2001/2002 survey (Health Policy for Children and Adolescents, No. 4) WHO Regional Office for Europe, Copenhagen.
6. Curie C et al (eds). Social determinants of health and well-being among young people. Health Behavior in School-aged Children (HBSC) study: international report from the 2009/2010 survey. Copenhagen, WHO Regional Office for Europe, 2012 (Health Policy for Children and Adolescents, No. 6).
7. Fenton KA, Lowndes CM: Recent trends in the epidemiology of sexually transmitted infections in the European Union. Sex Transm Infect 2004, 80:255-263.
8. Johnson AM, Mercer CH, Erens B, Copas AJ, McManus S, Wellings K, Fenton KA, Korovessis C, Macdowall W, Nanchahal K, Purdon S, Field J: Sexual behaviour in Britain: partnerships, practices, and HIV risk behaviours. Lancet 2001, 358:1835-1842.
9. Herlitz CA, Forsberg M: Sexual behaviour and risk assessment in different age cohorts in the general population of Sweden (1989-2007). Scand J Public Health 2010, 38:32-39.
10. Kangas I, Andersen B, McGarrigle CA, OStergaard L: A comparison of sexual behaviour and attitudes of healthy adolescents in a Danish high school in 1982, 1996, and 2001. Popul Health Metr 2004, 2:5.
11. Leridon H, Zessen V, Hubert M: The Europeans and their sexual partners.

In Sexual behaviour and HIV/AIDS in Europe. Edited by: Hubert M, Bajos N, Sandfort T. London: University College London Press; 1998:165-196.

12. Herlitz C: Sexual risk-taking in the general population of Sweden (1989-2007). Sex Health 2009, 6:272-280.

13. Curie C, Hurrelmann K, Setterobulte W, Smith R & Todd J (eds) Health and Health behaviour among young people (Health Policy for Children and Adolescents, No. 1). WHO Regional Office for Europe, Copenhagen (2000).
14. Youth Risk Behavior Survey. Available at : www.cdc.gov/healthyyouth/yrbs/cdcreports.htm
15. Michelle Rotermann. Sexual behaviour and condom use of 15- to 24-year-olds in 2003 and 2009/2010. Reports, Vol. 23, no. 1, March 2012
16. Newman PA, Zimmerman MA. Gender differences in HIV-related sexual risk behaviour among urban African American youth: a multivariate approach. AIDS Educ Prev. 2000;12:308-325.
17. Fergus S, Zimmerman MA, Caldwell CH. Growth trajectories of sexual risk behavior in adolescence and young adulthood. Am J Public Health. 2007;97:1096-1101.
18. Taylor, Homma & Ogilve. (2008). Trends in sexual health and risk behaviors among adolescents students in British Columbia. The Canadian Journal of Human Sexuality 2008, 17 (1/2), 1-14
19. Smith A, Agius P, Mitchell A, Catherine, Barrett & Marian Pitts. Secondary Students and Sexual Health 2008 Results of the 4th National Survey of Australian
20. Jeffrey V. Lazarus, Henna Sihvonen- Riemenschneider3, Ulrich Laukamm-Josten4, Fiona Wong, Jerker Liljestrand. Systematic Review of Interventions to Prevent the Spread of Sexually Transmitted Infections, Including HIV, Among Young People in Europe. CMJ 2010. doi: 10.3325/cmj.2010.51.74
21. Amirkhanian YA, Kelly JA, Kabakchieva E, McAuliffe TL, Vassileva S. Evaluation of a social network HIV prevention intervention program for young men who have sex with men in Russia and Bulgaria. AIDS Educ Prev. 2003;15:205-20.

22. Bagnall G, Lockerbie L. HIV and AIDS education for senior school pupils in Scotland: a quantitative evaluation. Health Educ J.1996;55:141-55.
23. Baraitser P, Dolan F, Feldman R, Cowley S. Sexual health work in a playground: lessons learnt from the evaluation of a small-scale sexual health project. J Fam Plann Reprod Health Care. 2002;28:18-22.
24. Borgia P, Marinacci C, Schifano P, Perucci CA. Is peer education the best approach for HIV prevention in schools? Findings from a randomized controlled trial. J Adolesc Health. 2005;36:508-16.
25. Borgia P, Spadea T, Perucci CA, De Pascali V, Fano V, Schifano P, et al. Limited effectiveness of a school-based HIV prevention campaign in Italy: A randomized controlled trial. Eur J Public Health.1997;7:411-7.
26. Diez E, Juarez O, Nebot M, Cerda N, Villalbi JR. Effects on attitudes, knowledge, intentions and behaviour of an AIDS prevention programme targeting secondary school adolescents. Glob Health Promot. 2000;7:17-22, 45.
27. Donati S, Medda E, Spinelli A, Grandolfo ME. Sex education in secondary schools: an Italian experience. J Adolesc Health. 2000;26:303-8.
28. James NJ, Gillies PA, Bignell CJ. Evaluation of a randomized controlled trial of HIV and sexually transmitted disease prevention in a genitourinary medicine clinic setting. AIDS. 1998;12:1235-42.
29. Kaldmae P, Priimagi L, Raudsepp A, Grintchak M, Valjaots E. Promotion of safer sexual behaviour and HIV/STD prevention among adolescent students and army recruits. AIDS Care. 2000;12:783-8.
30. Kocken P, Voorham T, Brandsma J, Swart W. Effects of peer-led AIDS education aimed at Turkish and Moroccan male immigrants in The Netherlands. A randomised controlled evaluation study. Eur J Public Health. 2001;11:153-9.
31. Low N, Connell P, McKevitt C, Baggili T, Tenant-Flowers M, More C, et al. 'You can't tell by looking': pilot study of a communitybase intervention to detect asymptomatic sexually transmitted infections. Int J STD AIDS. 2003;14:830-4.
32. Magnusson J, Kendall S, Oakley L, Townsend J. Promoting contraceptive services to teenagers. Community Pract. 2004;77:381-4.

33. Martijn C, de Vries NK, Voorham T, Brandsma J, Meis M, Hospers HJ. The effects of AIDS prevention programs by lay health advisors for migrants in The Netherlands. Patient Educ Couns. 2004;53:157-65.
34. Oakeshott P, Kerry S, Hay S, Hay P. Condom promotion in women attending inner city general practices for cervical smears: a randomized controlled trial. Fam Pract. 2000;17:56-9.
35. Rebull Fatsini J, Reverte Simo M, Pinas Forcadell I, Orti Llaveria A, Gonzalez Gavilan L, Contreras Barbeta E. Pre/post assessment of an HIV infection prevention intervention targeted at teenagers in Southern Tarragona, Spain [in Spanish]. Rev Esp Salud Publica. 2003;77:373-82.
36. Stephenson JM, Oakley A, Charleston S, Brodala A, Fenton K, Petruckevitch A, et al. Behavioural intervention trials for HIV/STD prevention in schools: are they feasible? Sex Transm Infect. 1998;74:405-8.
37. Stephenson JM, Strange V, Forrest S, Oakley A, Copas A, Allen E, et al. Pupil-led sex education in England (RIPPLE study): cluster-randomised intervention trial. Lancet. 2004;364:338-46.
38. Tyden T, Bergholm M, Hallen A, Odlind V, Olsson SE, Sjoden PO, et al. Evaluation of an STD-prevention program for Swedish university students. J Am Coll Health. 1998;47:70-5.
39. Wight D, Raab GM, Henderson M, Abraham C, Buston K, Hart G, et al. Limits of teacher delivered sex education: interim behavioural outcomes from randomised trial. BMJ. 2002;324:1430.
40. Sales JM, Milhausen RR, Diclemente RJ. A decade in review: building on the experiences of past adolescent STI/HIV interventions to optimise future prevention efforts. Sex Transm Infect. 2006;82:431-6.
41. Parker R, Wellings K, Lazarus JV. Sexuality education in Europe: An overview of current policies. Sex Educ. 2009;9:227-42.
42. Johnson WD, Diaz RM, Flanders WD, Goodman M, Hill AN, Holtgrave D, Malow R, McClellan WM. Behavioral interventions to reduce risk for sexual transmission of HIV among men who have sex with men. The Cochrane Library 2008, Issue 3.

43. Berg R. The effectiveness of behavioural and psychosocial HIV/STI prevention interventions for MSM in Europe: A systematic review. Euro Surveill. 2009;14(48):pii=19430
44. Kegeles SM, Hart GJ. Recent HIV-prevention interventions for gay men: Individual, small group and community based studies. AIDS. 1998;12 Suppl A:S209-15.
45. Herbst JH, Sherba RT, Crepaz N, DeLuca JB, Zohrabyan L, Stall RD, et al.A meta-analytic review of HIV behavioral interventions for reducing sexual risk behavior of men who have sex with men for reducing sexual risk behavior. J Acquir Immune Defic Syndr 2005;39:228-241.
46. Johnson WD, Semaan S, Hedges LV, et al.A protocol for the analytical aspects of a systematic review of HIV prevention research. J Acquir Immune Defic Syndr 2002;30(Suppl 1): S62–72.
47. Rees R, Kavanagh J., Burchett H, et al. (2004) HIV Health promotion and Men who have Sex with Men (MSM): A systematic review of research relevant to the development of and implementation of effective and appropriate interventions. London: EPPI-centre, Social Science Research Unit, Institute of Education, University of London.
48. Carballo-Diéguez A, Dolezal C, Leu C-S, Nieves L, Díaz F, Decena C, Balan I. A randomized controlled trial to test an HIV-prevention intervention for Latino gay and bisexual men: Lessons learned. AIDS Care 2005;17:314–328.
49. Dilley JW, Woods WJ, Sabatino J, et al.Changing sexual behavior among gay male repeat testers. J Acquir Immune Defic Syndr 2002;30:177–186.
50. Dilley JW, Woods WJ, Loeb L, Nelson K, Sheon N, Mullan J, Adler B, Chen S, McFarland W. Brief cognitive counseling with HIV testing to reduce sexual risk among men who have sex with men: Results from a randomized controlled trial using paraprofessional counselors. J Acquir Immune Defic Syndr 2007;44(5):569–577.
51. EXPLORE Study Team. Effects of a behavioural intervention to reduce acquisition of HIV infection among men who have sex with men: the EXPLORE randomised controlled study. Lancet 2004;364:41–50.

52. Healthy Living Project Team. Effects of a behavioral intervention to reduce risk of transmission among people living with HIV: the healthy living project randomized controlled study. J Acquir Immune Defic Syndr 2007;44(2):213–21.
53. Harding R, Bensley J, Corrigan N, Franks L, Stratman J, Waller Z,Warner J. Outcomes and lessons from a pilot RCT of a community-based HIV prevention multi-session group intervention for gay men. AIDS Care 2004;16:581–585.
54. Imrie J, Stephenson JM, Cowan FM, et al. A cognitive behavioral intervention to reduce sexually transmitted infections among gay men: randomised trial. BMJ 2001;322:1451-6.
55. Kalichman SC, Rompa D, Cage M. Group intervention to reduce HIV transmission risk behavior among persons living with HIV/AIDS. Behavior Modification 2005;29(2): 256–285.
56. Patterson TL, Shaw WS, Semple SJ. Reducing the sexual risk behaviors of HIV+ individuals: outcome of a randomized controlled trial. Ann Behav Med 2003;25:137–145.
57. Read SJ, Miller LC, Appleby PR, Nwosu ME, Reynaldo S, Lauren A, Putcha A. Socially Optimized Learning in a Virtual Environment: Reducing Risky Sexual Behavior Among Men Who Have Sex with Men. Human Communication Research 2006;32:1–34.
58. Richardson JL, Milam J, McCutchan A, Stoyanoff S, Bolan R, Weiss J, et al.Effect of brief safer-sex counseling by medical providers to HIV-1 seropositive patients: a multiclinic assessment. AIDS 2004;18:1179 -1186.
59. Shoptaw S, Reback CJ, Peck JA, Yang X, Rotheram-Fuller E, Larkins S, et al.Behavioral treatment approaches for methamphetamine dependence and HIV-related sexual risk behaviors among urban gay and bisexual men. Drug and Alcohol Dependence 2005 May 9;78(2):125–34.
60. Weller S, Davis K. Condom eff ectiveness in reducing heterosexual HIV transmission. Cochrane Database Syst Rev 2002, 1: CD003255.
61. Foss AM, Hossain M, Vickerman PT, Watts CH. A systematic review of published evidence on intervention impact on condom use in sub-Saharan Africa and Asia. Sex Transm Infect 2007;83: 510–16.

62. Nancy S Padian, Anne Buvé, Jennifer Balkus, David Serwadda, Ward Cates Jr Biomedical interventions to prevent HIV infection: evidence, challenges, and way forward. Lancet 2008; 372: 585–99

Annex: Outline of selected surveys in the "report of the state of risky sexual behavior in selected developed countries"

The Health Behavior in School-aged Children (HBSC) survey

The HBSC collects a range of data including sexual behavior information every four years on 11, 13, and 15 year-old males and females. It was initiated since 1982, when researchers from England, Finland and Norway agree to develop and implement a common research protocol to survey school children. HBSC currently includes 43 countries and regions across Europe and North America. It is been adopted by the Regional Office for Europe as a collaborative study since 1983.

The Youth Risk Behavior Surveillance System (YRBSS)

The YRBSS collects information on priority health-risk behaviors and the prevalence of obesity and asthma among youth and young adults in the United States. The YRBSS comprises a national school-based survey conducted by the CDC, and state, territorial, and district surveys conducted by state, territorial, and local education and health agencies and tribal governments. There are six health-risk behaviors considered as priority and which includes: Behavior that contribute to unintentional injuries and violence, sexual behavior that contribute to unintended pregnancy and sexually transmitted diseases, alcohol and other drug use, tobacco use, unhealthy dietary behaviors, and inadequate physical activity.

National Survey of Secondary Students and Sexual Health

This is the Australian National survey which was initiated since 1992, and survey secondary students by collecting information on health status, knowledge related to HIV and other sexually transmitted infection, and sexual behavior, beliefs and perceptions.

Canadian Community Health Survey (CCHS)

The CCHS was conceived as a response to the issue and problems with the health information system in Canada, and as a results of conjoined efforts from the Canadian

Institute for Health Information (CHIH), Statistics Canada, and Health Canada. The central objective of the CCHS is to gather health-related data at the sub-provincial levels of geography.

2014年度研究（平成26年度）

（研究のうち一部のみ抜粋）

1-2. 開発した予防 web サイトの効果評価に関する研究

ランダム化比較試験(Randomized Controlled Trial: RCT)

【 研究の背景 】

本研究班では、予防支援ニーズが高いにもかかわらず、アプローチが困難なセクシュアルマイノリティー若年者や活発で無防備な性行動を取っている若者（就学者、非就学者）に対して、彼らの現状に即した効果的な予防サイトを開発し、そのサイトにより多くの若者を誘導できる普及方法の開発を行い、予算・時間・人的資源等の限界の中で、学校等の教育行政の場、保健所等の保健行政の場で実施可能で継続可能な予防啓発方法の開発を行うことを最終目的とする。初年度は、①多様性のある若者（セクシュアルマイノリティー若者、性的に活発で無防備な性行動をとる若者）向け支援サイト開発のための形成調査の実施：国内外の思春期のセクシュアルマイノリティー向けサイトの内容分析、主要先進国における思春期のセクシャルマイノリティー向け対策・教育に関する文献調査。②開発したプロトタイプのサイトに対する某社の Web モニターを対象にネット調査を実施し、サイトに対する感想の自由記載情報を収集し、その内容分析を行った。その結果（特にネガティブなコメント）を基に当事者を含むサイト開発チームにてサイトの改善を実施した。③最終年度は、開発したサイトの閲覧の効果評価を実施する。

【 方法 】

【研究デザイン】

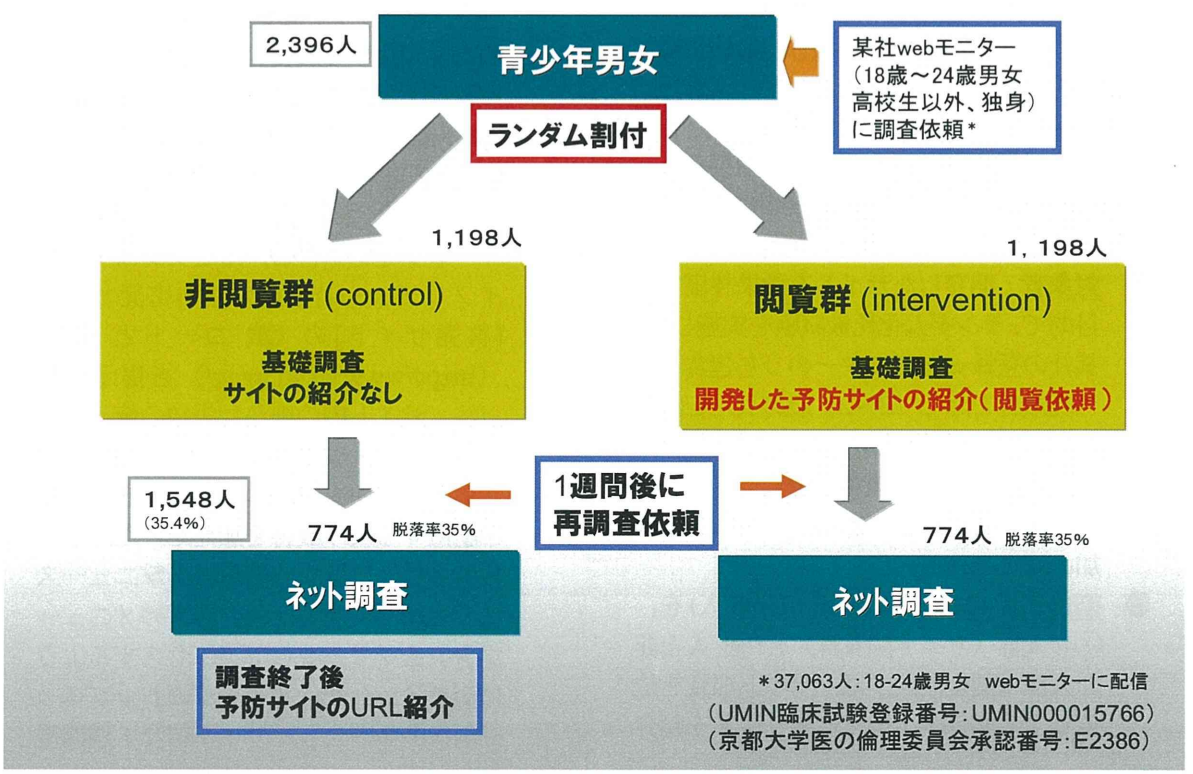
■ランダム化比較試験を用いたサイトの効果評価：初年度、2 年度と思春期のセクシュアルマイノリティー向け予防啓発 web サイト（以下、啓発サイト）の開発の準備とプロトタイプの開発を実施し、最終年度である今年度はサイト誘導カードの誘導効果の最終検討と啓発サイトに誘導された若者に対する啓発（サイト閲覧）の効果をランダム化比較試験（Randomized Controlled Trial：RCT）にて評価した。

- **対象者**：開発したサイトを効果評価する目的で、ランダム化比較試験を実施した。某社の登録 web モニターのうち包含基準（既婚者を除く 18～24 歳男女）を満たす 37,063 人(男性 18,700 人、女性 18,363 人）を対象に性に関する調査（ネットサーベイ）を依頼し、2,396 人から調査参加の同意を得た。
- **割付デザイン**：参加同意者(2,396 人)を、①介入群（サイト閲覧群）1,198 人と非介入群（調査期間中は、サイト閲覧を依頼せず、調査終了後、啓発サイトを紹介した：delayed control）1,198 人の 2 群にランダムに割り付けた。
- **介入デザイン**：各群別に実施方法を記す。①介入群（サイト閲覧群）：基礎調査（2-3 問の性に関する調査実施の目的等に関する説明および関連質問）実施直後に、2013 年度までに本研究班で開発したサイト[プロトタイプの従来サイト]に、2014 年度にさらに改善を加えた PC（スマートフォンも含む）用セクシュアルマイノリティー若者向け予防啓発サイト[啓発サイト]の QR コードと URL（http://www.wysh.jp/qy/）を提示した（注：サイト内の細かな語句の修正に加えトップページには性感染症・HIV に関する重要情報を衝撃のニュースとして集中配置するよう改善を加えた。ただし、性的多様性に関する情報は衝撃ニュースにふさわしくないため、通常のメニューボタンをクリックしてアクセスするようにデザインした。次ページのトップページ画像参照のこと)。サイト紹介 1 週間後

に介入後のネット調査を実施した。②非介入群（サイト閲覧をしていない群）：基礎調査（2-3 問の性に関する調査実施の目的等に関する説明および関連質問）実施直後にはどのサイトの紹介もしなかった。基礎調査の 1 週間後に介入群と同じ内容のネット調査を実施した。但し倫理上の観点から、**非介入**群にも調査終了後同じ啓発サイト URL を提示した（delayed control）。

- **測定項目**：質問項目は 30 項目で、①性感染症と HIV との関係、②人工妊娠中絶経験と性感染症罹患の多さの比較、③性感染症と不妊との関係、④口腔性交（オーラルセックス）による、性器から口、口から性器への感染について、⑤性感染症罹患後の症状、⑥わが国の若者の性感染症罹患状況、⑦女性の年代別性感染症の易感染性、⑧肛門性交と膣性交の HIV 感染リスク、⑨現在、一人のパートナーだけの場合の性感染症罹患リスク、⑩性経験の有無、⑪性的指向、⑫性感染症のリスク認知、⑬HIV のリスク認知、⑭同性愛は疾患か、⑮性同一障害と同性愛について、⑯同性愛は治療可能か、⑰同性愛は本人に意思で変更可能か、⑱セクシュアルマイノリティーはどれくらいの人数いるか、⑲男性同士の性行為の容認度、⑳女性同士の性行為の容認度、(21)会社の同僚の性的多様性への態度、(22)会社の上司、学校の先生の性的多様性への態度、(23)自分の友達の性的多様性に対する態度、(24)自分の親友の性的多様性に対する態度、(25)家族の性的多様性に対する態度、(26)性的多様性について正しい情報の必要性への態度、(27)性的多様性に関する学校教育の必要性への態度、(28)セクシュアルマイノリティーへの差別偏見防止教育の必要性への態度、(29)（介入群のみ）[啓発サイト閲覧して]特に何が興味深かったか（自由記載）、(30)[啓発サイト]に対する感想等のコメント(自由記載)が含まれていた。測定結果を 2 群で比較検討し介入の効果を評価した。

図 1．ランダム化比較試験：randomized controlled trial(RCT)



■サイト開発と改善（概要）：サイト開発の詳細は、サイト開発のページを参照のこと。ここでは、概要のみを記す。2013 年度のインターネット調査にて、開発したプロトタイプのサイトについての感想を自由記載で収集し、その内容分析を実施した。その結果、特にベガティブコメントを基にして、当事者を含むサイト開発チームメンバーでサイトの開発を行った。その際、セクシュアルマイノリティー親の会（NGO）の協力も得て、当事者およびその家族もアクセスできるサイトになるように心がけた。また、このサイトはセクシュアルマイノリティーのみを対象とするのではなく、性的多様性について広く知ってもらうためのサイトであるため、若者全体のセクシャルヘルスで特に重要と思われる情報を強制的に配置する方法を利用した。具体的には、一般にサイト利用者は、トップページで本人がメニューボタンを選択して情報を収集する形式が取られているため、本人の関心外の重要な情報の提供には限界があった。そこで、今年度作成した啓発サイトでは、トップページしか見ない場合でも、重要情報がすべて目に入るように、トップページに重要情報をパンフレットの見出しのように［絶対に読んでおくべき衝撃ニュース］として配置して、強制的に情報に暴露させ、そこからより詳細な情報収集へと移れるように改善した。（図２参照のこと）

図２．啓発サイト（Out of the Box）のトップページ画像

■ 結果

● ネット調査

介入群（サイト閲覧群）774 名（男性 387 名、女性 387 名）、非介入群（サイト非閲覧群）774 名（男性 387 名、女性 387 名）の調査結果を比較した。その結果を示す。

まずは、調査結果の概要をグラフとともに、説明し、その後、各設問ごとに、性別、年齢別（10 代、20 代）に結果を記す。

（1）性感染症/HIV に関する知識：性感染症、HIV に関する知識は、介入群と非介入群の正解率の差は、全項目で介入群の方が非介入群よりも高値で、男性では 15.5%～28.1%、女性では 10.9%～25.6%高かった（統計学的に有意）。

（2）STI/HIV へのリスク認知：STI 感染へのリスク認知率は、介入群と非介入群を比較すると、男性では 5.2%、女性では 6.2%高値を示し、HIV 感染へのリスク認知は介入群の方が男性で 14.4%、女性では 7.4%のリスク認知の増加が認められた。

（3）性的多様性に対する知識：一方、性的多様性に関する知識の質問では、介入群と非介入群の正解率の差は、性感染症や HIV に関する質問ほどの大きな差はないが、全項目で介入群の方が非介入群よりも高値で、男性では 7.8%～12.4%と統計的に有意に高く、女性では、2.9%～8.6%高値であった。

（4）性的多様性に関する意識・態度：また、性的多様性に対する情報提供の必要性、学校における教育の必要性、セクシャルマイノリティーに対する差別偏見減少の教育の必要の質問では、介入群と非介入群では、男性では 5.9%～11.4%統計的有意に高値を示し、女性では男性ほどではないが、3.1%～9.5%高い値を示した。

（5）まとめ：以上の結果より、サイト閲覧により、性感染症や HIV に関する知識の大幅上昇、リスク認知の上昇、さらに性的多様性に関する知識の上昇、性的多様性に対する教育の必要性に対する肯定的態度の上昇が認められた。

図 3. HIV/STD 関連知識の比較