

Social Media, Men who have sex with men,
Sexual and Holistic Health Study (SMMASH2)

EXECUTIVE SUMMARY

A report commissioned by NHS Greater Glasgow and
Clyde and NHS Lothian Health Boards

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Electronic copies of this report, as well as the full SMMASH2 report, are available from
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Chapter 1 Introduction And Methodology

- The SMMASH2 survey recruited 1547 MSM aged 16 and over in Scotland from online sociosexual media between April and June 2016. Participants were asked a range of questions around their sexual, mental and wider health behaviours as well as sociodemographic information. The rest of this report provides a detailed analysis of these results, comparing men who live in NHS Greater Glasgow and Clyde (GGC), NHS Lothian and the Rest of Scotland (RoS).

Chapter 2 Sample Demographics

- Overall 1547 MSM in Scotland completed the SMMASH2 Internet survey, recruited from gay sociosexual media websites and apps, distributed across NHS Lothian (22.5%), NHS GGC (29.5%) and the RoS (48%).

- They were recruited from Gaydar (37.8%, n=584), Squirr (17.9%, n=277), Recon (16.1%, n=249), Grindr (15.6%, n=241), Hornet (8.0%, n=124) and Growlr (4.7%, n=72), which partially reflects the chronological order deployed in recruitment invitations (Gaydar was first, Hornet was last).

- Men were roughly equally represented across different age categories of 16-25 (18.7%), 26-35 (22.3%), 36-45 (23.0%) and 46+ years (36.0%), although the most predominant age range of participants were those aged 46+ years, suggesting that we have an older cohort of men.

- Participants were highly educated with 65% (n=891) possessing a university degree level qualification (undergraduate/postgraduate) and only 2% (n=32) indicating they did not possess any academic qualifications. Men in the RoS reported significantly lower education levels than men in NHS GGC and NHS Lothian.

- Most participants identified themselves as either White Scottish (72.5%, n=1113) or White British Non-Scottish (26.4%, n=379) with very few non-white ethnicities (2.9%, n=44). NHS Lothian was more ethnically diverse than NHS GGC and the RoS, having fewer White Scottish and more White British Non-Scottish and White Other participants.

- Most participants identified as gay (80.9%, n=1242), but almost 1 in 5 identified as bisexual (18.2%, n=279), and a few said they were straight (0.9%, n=13). Men in NHS GGC and NHS Lothian were significantly more likely to report being gay, and men in the RoS more likely to report being bisexual/straight.

- Almost two thirds of men were 'out' about their sexual orientation to most others (63.3%, n=911), but 25.0% were out to few people or no-one. Men in NHS GGC and NHS Lothian reported significantly higher levels of 'outness' compared to men in the RoS. Older men (≥ 46 years) were significantly less out than younger men (16-25 years, 26-35 years and 36-45 years). Furthermore, gay identified men were significantly more out than bisexual/straight identified men.

- Overall, 6.4% (n=97) of participants considered themselves transgender with the majority (93.6%, n=1430) stating they were not.

- Most participants were single (59.7%, n=919), but almost one third (29.6%, n=456) reported a regular male partner, and 1 in 10 reported a regular female partner (10.7%, n=165). Men in NHS GGC were more likely to be single and less likely to have a regular female partner; men in NHS Lothian were less likely to be single and more likely to have a regular male partner; and men in the RoS were more likely to have a regular female partner. These differences were all statistically significant.

- Most participants lived alone (41%, n=603) and 30.4% (n=447) said they lived with a partner. Smaller proportions lived in shared accommodation (15.4%, n=227) or with their parents (13.1%, n=191).

- One third (33.6%, n=467) of participants reported at least one disability, which is almost double the national average of 19% for those of working age in Scotland (Scottish Gov., 2016). Mental Health condition(s) were the most commonly reported (15.5%, n=215) followed by long-term condition(s) other than HIV (9.1%, n=126).

- Most participants were in employment (74.8%, n=1092), around 1 in 10 was either a student (9.7%, n=142), or a retiree/carer (10.2%, n=149) respectively. 5.2% (n=76) of participants were unemployed which is marginally lower than the Scottish national average of 5.5% (ONS 2016).

- Overall, almost 60% of the sample reported no (27.9%) or only occasional (29.4%) financial worries in the past year, whilst just under 40% said they had financial worries sometimes (25.9%), most of the time (10.4%) or all of the time (6.3%).

- In contrast, almost 90% of participants said they had little difficulty meeting their basic financial needs in the past year. Over two-thirds of men (64.8%) said they had never and a further quarter (23.2%) only occasionally had difficulty meeting their basic financial needs, whilst a small group quite often (7.5%) or very often (4.6%) found this difficult.

- Most participants never (51.8%, n=759) or infrequently (31.9%, n=467) used the commercial gay scene. Only a very small proportion indicated regular gay scene use (15.9%) of more than once a month. Men in NHS GGC and NHS Lothian reported significantly more frequent levels of commercial gay scene use than men in the RoS.

- Half the cohort (50.1%, n=733) indicated that commercial gay venues were nearby or relatively nearby, almost one quarter (23.7%, n=347) said they were far away and 7.9% (n=116)

were unsure of where commercial gay venues were proximally located. Men in NHS GGC and NHS Lothian felt they lived significantly nearer to the commercial gay scene compared to men in the RoS.

- Only 26% (n=415) of participants provided their full postcode, which is necessary to generate the Scottish Index of Multiple Deprivation (SIMD, 2014 configuration) score, which measures levels of deprivation in Scotland. The proportion of participants across each level of the SIMD scale (1-5) were roughly equal, suggesting that MSM recruited online are not a particularly affluent group within society, and there was no difference in the level of deprivation between the 3 NHS Health Board regions.

Chapter 3 Sexual Behaviours

- Overall, men in Scotland reported high number of sex partners in the last 12 months; this did not differ across the 3 NHS regions or other sociodemographic factors.

- Just over half reported condomless anal intercourse (CAI) in the last 12 months and one in 5 reported CAI in the past 3 months; this did not differ across the 3 NHS regions or other sociodemographic factors.

- Almost one third of participants reported group sex in the last 12 months, but fisting was less common, reported by around 1 in 14 (7.1%) men annually.

- We calculated a measure of high risk CAI to assess those men whose condomless anal sex behaviours were at greater risk of HIV transmission. This was defined as reporting

- CAI with at least 2 partners or
- CAI with a casual partner or
- at least 1 CAI partner whose HIV status was unknown or serodiscordant to themselves

in the last 12 months. As such, seroconcordant CAI with one regular partner in the last 12 months is defined as lower risk, but Pre-Exposure Prophylaxis and 'Treatment as Prevention' are not controlled for.

- One third of men reported high risk CAI in the last 12 months, in line with most other surveys of MSM in European countries. This did not differ by NHS region or age, but gay identified men, single men and men with the financial worries were significantly more likely to report high risk CAI.

- Over 1 in 8 men (13.2%) reported sex with a woman in the previous 12 months, which did not differ by NHS region, age or financial worries, but unsurprisingly, bisexual/straight identified men and men reporting a regular female partner were significantly (far) more likely to report sex with women.

- For men in this study, the average number of female partners (2.3) in the last 12 months (amongst men who reported any sex with a woman) was far lower than the average number of male partners (12.7) for the whole sample, in the last 12 months.

- We calculated a measure of high risk condomless vaginal or anal intercourse (CVAI) with women only, to assess those men whose CVAI behaviours with women presented greater risk of HIV transmission. This was defined as reporting

- CAI with at least 2 female partners or
- CAI with a casual female partner or
- at least 1 CAI female partner whose HIV status was unknown or serodiscordant to themselves

in the last 12 months. As such, seroconcordant CVAI with one regular female partner in the last 12 months is defined as lower risk, but Pre-Exposure Prophylaxis and 'Treatment as Prevention' are not controlled for.

- One quarter of those men who had sex with women in the last 12 months reported high risk CVAI with women; this did not differ by age, sexual identity, relationship status or financial worries. However among men who had sex with women in the last 12 months, men in NHS GGC were significantly more likely to report high risk sex with women than participants in both NHS Lothian and the RoS.

- Only 15 men (1.1%) reported high risk sex with at least 1 man and 1 woman in the last 12 months, precluding any further meaningful analysis with this subgroup of men.

- Lifetime experience of selling or exchanging sex (10.3%) was relatively common amongst this sample, but only around 2-3% of men reported sexual exchange for money, a place to sleep or goods in the last 12 months.

- Age was related to exchanging sex for a place to sleep or goods in the last 12 months. Younger men were significantly more likely to report sex in exchange for money or a place to stay. Similarly, older men were significantly less likely to report having sex in exchange for money or a place to stay. There was also some evidence that bisexual/straight identified men were more likely to report selling or exchanging sex than gay identified men.

Chapter 4 HIV Testing

- Most of the men in this sample (80.3%) thought they were HIV negative, 7.2% said they were HIV positive and 12.4% said they did not know.

- Overall, 79.3% of men said they had ever had an HIV test and the remaining 20.7% reported that they had not.

- Participants' primary reason to undergo their last HIV test was as part of an annual health check (57.4%). Other important reasons were testing because of 'risky sex that I was worried about' (16.7%), not having had a test for a long time (15.5%) and being offered a test at a clinic (10.7%).

- Concerning their last HIV test, most (90.6%) men said it was HIV negative, 8.9% said it was HIV positive and a few men said they 'didn't know'.

- Only sexually active, HIV-/untested MSM need to test for HIV (at least in terms of sexual risk factors). Considering this subgroup of men, 78.8% had ever had an HIV test with the remaining 21.2% reporting they had never been tested

- BASHH guidelines recommend that MSM should test at least annually for HIV. However in this study, just under one quarter of sexually active, HIV-/untested men (21.4%) had tested in the last 3 months, cumulatively just over one third (37.1%) in the last 6 months and cumulatively just over half (53.7%) in the last year. This means that in Scotland, almost half (46.3%) of MSM are not testing sufficiently frequently for HIV.

- Recent (in the last year) HIV testing was patterned by age, sexual identity, relationship status and financial worries, as follows; younger men (16-25 years, 58.7%; 26-35 years, 59.9%) were significantly more likely, and men aged 46+ years (46.1%) significantly less likely, to report recent testing; gay identified men (56.4%) were significantly more likely to report recent testing than bisexual/straight identified men (41.8%); single men (57.6%) were significantly more likely, and men with a regular female partner (34.6%) significantly less likely, to report recent testing; and men who reported financial worries 'sometimes/all of the time' (60.3%) were significantly more likely to report recent testing than men who 'occasionally/never' had financial concerns (48.8%).

- Sexually active HIV negative/untested men in this study also report suboptimal *regular* testing strategies. Only 54.5% reported regular, at least annually testing. This means that almost half (45.5%) adopt variable, intermittent or spontaneous approaches, for example, triggered by high risk sexual behaviour.

- BASHH guidelines suggest that MSM engaging in high risk sexual activity should regularly test for HIV every 3 months. Again, a suboptimal testing picture prevails for high risk men in Scotland. Overall, 38.8% of sexually active, HIV negative/untested men in our sample report high risk sex. Of these men, 82.1% (n=380) have ever had an HIV test but 36.3% have never tested for HIV.

- Less than one third (30.0%) of high risk MSM report an HIV test in the previous 3 months, and cumulatively only two thirds (63.7%) were tested in the previous year. Consequently, over one third (36.3%) of high risk men were last tested over one year ago or never. In addition, only 13.2% of high risk men reported *regularly* testing every 3 months, although cumulatively 35.9% reported regularly testing at least every 6 months and 50.4% yearly. However it is problematic that almost half (49.6%) of high risk men have either no regular pattern of HIV testing, a less than annual testing pattern or are untested. As such, a clear imperative for health improvement is to increase lifetime, recent HIV and regular testing amongst MSM who report high risk sex.

- We defined 'appropriate testing' as reporting regular 3 monthly testing for high risk men and at least annual testing for low risk men, partially based on the current BASHH guidelines. According to these criteria, only 40.3% of men in Scotland appear to be testing appropriately, with the majority (59.7%, n=709) testing inappropriately, that is, insufficiently frequently. Analysis suggested that gay identified men (42.1%) were significantly more likely to test appropriately than bisexual/straight identified men (32.3%) and single men (42.9%) were significantly more likely, and men with a regular female partner significantly less likely, to test appropriately (27.7%). Again, this highlights the importance of increasing HIV testing frequency overall amongst MSM in Scotland.

- We asked MSM about their assumptions regarding the behavioural norms for HIV testing, using the trigger statement, 'Most of my Gay friends have had an HIV test'. Overall, one third agreed (10.1% Strongly Agreed; 26.4% Agreed), just over half (53.7%) were Unsure and just under 1 in 10 disagreed (7.1% Disagreed; 2.7% Strongly Disagreed). Although behavioural norms for HIV testing did not differ with any of our demographic variables, those MSM who reported 'testing appropriately' and men who identified as engaging in 'low risk CAI' were significantly more likely to agree that HIV testing was normative amongst their peer group.

- Participating in HIV testing remains a critical component of public health initiatives at both a population and individual level. However, these findings raise major concerns about the relationship between engaging in testing for HIV and doing so with sufficient regularity to meet current recommendations for optimising health protection. The overall lack of engagement by MSM in HIV testing activities requires immediate attention to offset the potential for poor health outcomes for this group.

Chapter 5 Sexually Transmitted Infection Testing Behaviours

- STI testing amongst sexually active, HIV-/untested MSM in this sample remains suboptimal. Under half (45.1%) of these men had taken an STI test in the last year, in line with current guidelines. This means that over half (54.9%) are potentially at risk of undiagnosed STI infection on an annual basis. Older men (46+ years; 39.9%), bisexual/straight identified men (38.7%) and men with financial worries (42.3%) were all significantly less likely to report an STI test in the previous year. Men with a regular male or female partner were significantly less likely to report an STI test, though further analysis is required to determine whether they were at risk of STIs based on reporting multiple sex partners.

- One fifth of sexually active, HIV-/untested MSM who reported an STI test in the previous year said they received a positive STI diagnosis, with gay men (21.1%) significantly more likely to report a positive STI diagnosis than bisexual identified men (10.3%). In addition, single men (22.3%) were significantly more likely to have received a positive STI diagnosis than men with a regular male (18.4%) or female (2.4%) partner, suggesting a protective effect of a regular relationship on STI diagnoses. Most (76.6%) men said they had informed at least some of their sex partners about their positive STI diagnosis, although only 41.7% had informed them all.

- Considering all sexually active HIV-/untested men in this study in the previous year, 8.8% had been diagnosed with an STI, a further 36.2% had tested negative for STIs whilst 55.1% had not had an STI test.

- Overall, over half (56.7%) of sexually active HIV-/untested men in this study report either an HIV test, an STI test or both in the last year and so may be considered to be in touch with services in the wider sense. The main locations of testing were gay specific GUM services, non gay-specific GUM services, GPs and home testing kits.

Chapter 6 Sexual Function

- Sexual function was assessed using components from the *Sexual Function Clinical Use* scale, which was originally developed as part of the 'National Survey of Sexual Attitudes and Lifestyles' study (NATSAL; Mitchell et al, 2013).

- Overall, around half of the sexually active participants in this study reported at least some sexual function problems at least some of the time in the last year. Whilst unwanted physical pain was relatively rare (16.7%), experiencing problems such as lack of interest in sex (48.7%), lack of enjoyment in sex (40.0%), lack of orgasm/taking too long to orgasm (44.1%),

premature ejaculation (38.8%) and feeling anxious during sex (39.7%) at least sometimes were rather common. Over one quarter (27.7%) of men felt no sexual arousal at least some of the time. In terms of overall sexual function (OSF), clear sociodemographic differences were observed herein, by age (younger men had significantly poorer OSF than older men), sexual identity (gay men had significantly poorer OSF than bisexual/straight identified men), relationship status (single men had significantly poorer OSF than men with a regular (male or female) partner) and financial worries (men with financial worries had significantly poorer OSF).

- In concert, that a large proportion of MSM experience various sexual function problems at least some of the time is worthy of further attention.

Chapter 7 Sexual Confidence

- Sexual confidence was assessed using modified components of the *Confidence about Sex and Relationships* scale, which was originally developed as part of the 'Sex Unzipped' study (Bailey, et al., 2013).

- Men's overall sexual confidence differed quite markedly around the different items examined within this study. Whilst certain issues were difficult for a sizeable proportion of participants (e.g. asking about partner's HIV status (35.5%) or viral load (44.4%), making the first move with sex (30.5%)), most of the other issues were generally less problematic overall.

- In particular, most men had few problems suggesting sex (90.2%), refusing sex if a partner won't use a condom (87.0%), telling a partner they don't want sex (82.4%), telling a partner how to give them sexual pleasure (89.1%), telling a partner that they like a certain sexual activity (79.2%) or that a certain activity makes them uncomfortable (87.6%). Putting a condom on their partner (87.8%) or themselves (76.2%) without losing the erection was

unproblematic for most men but it is notable that almost a quarter of men (23.8%) said they probably or definitely could not do put a condom on themselves without losing their erection.

- Considering overall sexual confidence, this did not differ by NHS Region, age group or sexual identity. Men with a regular male partner had significantly greater sexual confidence than single men. This may be because being with a regular partner can increase sexual confidence, compared to new or intermittent sexual partners, although this cannot be assumed in all cases. Finally, men with financial worries also have significantly poorer overall sexual confidence; though the direction of this relationship, or whether it is mitigated by other variable(s) related to both issues (e.g. for example, mental health), cannot be ascertained from this analysis.

Chapter 8 Experiences Of Sexual, Physical And Emotional Abuse

- Overall, just over 1 in 5 MSM in Scotland (20.9%) have experienced some form of abuse in the previous year from a partner or an ex-partner.

- About 1 in 8 (12.0%) reported emotional abuse, 1 in 12 (8.1%) reported controlling behaviour, 1 in 16 physical abuse (6.0%) or fear of a partner/ex-partner (5.9%) and 1 in 23 (4.4%) reported sexual abuse in the previous year.

- Experiences of abuse were also patterned by several of our key sociodemographic variables. Specifically, younger men (16-25 years, 26.5%; 26-35 years, 24.6%; 36-45 years, 24.9%), gay identified men (22.3%), men with a regular male partner (24.3%) and men with financial worries (28.9%) were all significantly more likely to report experience of abuse in the previous year.

- In addition, 1 in 8 men (12.4%) reported multiple (2 or more) types of abuse in the previous year.

- Finally, since almost 1 in 10 participants declined to view these questions, which may be because they were not willing to reflect on difficult experiences, these results should be considered a conservative estimate of the actual levels of abuse experienced by MSM in Scotland.

Chapter 9 Mental Health

- Diagnosed mental health problems were common amongst MSM in Scotland, with almost one third of men (32.3%) having had a mental health problem diagnosed by a doctor within their lifetime.

- Gay identified men (33.7%), men who were single (34.8%) or have a regular male partner (32.6%) and men who report financial worries (46.5%) were all significantly more likely to report a diagnosed mental health problem. There was also some tentative evidence that older men (36-45 years, 36.9%) were more likely to have received such a diagnosis.

- Regarding the type of mental health disorder men have been diagnosed with, depression (22.2% of the whole sample), anxiety (14.0%) and mixed anxiety/depression (14.6%) were by far the most common. Few men (0.4% - 2.0%) in the whole sample reported each of the other psychiatric disorders assessed. Therefore, levels of depression, anxiety and mixed anxiety/depression are higher amongst MSM than the wider population of Scotland, but levels of other mental health disorders are broadly similar (Nowell, 2014).

- Most men who have been diagnosed with mental health problems in their lifetime had also been affected by them in the previous year. Overall, 72.4% of men diagnosed with depression, 71.1% of those diagnosed with mixed anxiety/depression and 80.9% of those diagnosed with an anxiety disorder had experienced this mental illness in the last year, respectively. The pattern for other psychiatric disorders was equally high.

- Using the Generalised Anxiety Disorder Questionnaire (GAD-7), just over 1 in 5 (20.4%) men in this study were assessed as having moderate to severe anxiety symptoms in the previous 2 weeks and as such should be considered for treatment according to clinical guidelines; of these well over one third (38.9% or 8.0% of the whole sample) had not had this mental health problem diagnosed.

- Moreover, younger men (16-25 years, 28.2%; 26-35 years, 27.6%), gay identified men (21.9%), single men (23.8%) and men with financial worries (32.7%) were all significantly more likely to report moderate/severe anxiety symptoms. There was also some tentative evidence that men in NHS GGC (24.7%) were more likely to have moderate/severe anxiety than men living elsewhere.

- Based on the Patient Health Questionnaire (PHQ9), over half of participants (53.2%) had experienced mild-to-severe depression in the previous 2 weeks; 38.8% had mild-to-moderate depression and according to clinical guidelines should be referred to their GP regarding the issue, whilst a further 14.3% had moderately-severe-to-severe symptoms and as such warrant clinically lead treatment for their depression.

- Of the men in this study who had mild-to-severe depression, over half (55.2%) had not had this diagnosed by a doctor and therefore were not receiving treatment for their mental health problems.

- Depression levels and severity tended to decrease with age, with younger men significantly less likely to report no depression (16-25 years, 32.3%) and significantly more likely to report both mild-to-moderate (16-25 years, 50.0%) and moderately severe-to-severe (16-25 years, 17.7%; 26-35 years, 19.1%) depression. Single men (42.1% mild/moderate, 17.8% moderately severe-to-severe) were significantly more likely to report depression symptoms than men with a regular (male or female) partner and men with financial worries (47.1%

mild/moderate; 23.8% moderately severe-to-severe) were significantly more likely to report depression symptoms than men with no financial worries.

- In concert these data suggest that MSM experience high levels of depression, anxiety and mixed depression/anxiety symptoms, a sizeable proportion of which appears to be undiagnosed, but that levels of other mental health disorders are in line with the wider population.

Chapter 10 Stigma And Psychological Functioning

- The salutogenic concept of a “sense of coherence” (Eriksson, 2007), theorises that the way people relate to their life will subsequently impact upon their health. The Sense of Coherence (SoC - Eriksson, 2007) scale was used in the SMMASH2 study to measure participants’ overall resilience, which comprises three sub-scales of Comprehensibility, Manageability and Meaning as well as an overall SoC score.

- Reliability analysis using Cronbach’s Alpha suggested good reliability for the overall SoC, Comprehensibility and Meaning. SoC Manageability demonstrated acceptable reliability, given this is a well-established measure.

- Average SoC amongst MSM in Scotland was 20% lower compared to the general population of Glasgow (Walsh et a., 2014). As such we may tentatively conclude that overall, MSM in Scotland have lower resilience, as measured by the SoC scale, than the general population.

- Analyses suggested that; younger men had significantly lower levels of resilience than older men; single men had significantly lower levels of resilience than men with a regular (male or female) partner and men who reported financial worries had significantly lower levels of resilience than men who reported no financial worries.

- Emotional Competency (EC) is the ability to understand and regulate emotions skilfully to help improve your well-being. EC was assessed using the Trait Emotional Intelligence Questionnaire (Petrides and Furnham, 2003), which measures overall EC as well as EC Wellbeing, EC Self-control, EC Emotionality and EC Sociability. It is important to note that these measures do not directly equate to our everyday understanding of the concepts after which they are named. Rather, they measure components of participants' emotional competency.

- Reliability analysis using Cronbach's Alpha suggested that the overall EC scale, and four subscales demonstrated good reliability amongst this population.

- Older men had significantly lower emotional competency than younger men. This makes sense since it is theorised that emotional competency develops, at least in part, through emotional and romantic/sexual relationship learning during teenage years. The socio-legal situation for older men meant that testing and developing emotional relationships with other men during their teenage years (e.g. 1960 – mid 1980s) when homosexuality was illegal (in Scotland until 1980) and highly socially stigmatised, would have been substantially more difficult than for the youngest men in this study, due to the great steps in social and legal acceptance of homosexuality over the past 3 decades, not least the introduction of equal marriage in Scotland in 2014.

- Men in NHS GGC and NHS Lothian report significantly lower EC Emotionality than men in the RoS. In addition, men in NHS GGC report significantly lower EC Sociability than men in the RoS. Further research is required to interpret why these differences have arisen.

- Gay identified men report significantly lower EC than bisexually and heterosexually identified men. This is potentially the impact of a lack of opportunity to develop romantic/sexual relationships with men during teenage years, compared to opportunities for romantic/sexual relationships with women, which bisexual/heterosexual identified men are

more likely to benefit from. However, overall this was a relatively small effect for one subcomponent of EC only.

- Single men reported significantly higher EC (overall EC, EC Wellbeing, EC Self-control and EC Emotionality) than men with a regular (male or female) partner. Further research is required to interpret these differences.

- Men with financial worries have significantly higher EC, based on the overall measure and each sub-component. Further research is required to interpret these differences.

- The 20-item Gay-Related Stigma scale (Frost et al, 2007), was used to measure overall gay-related stigma, along with two sub-components of gay-related stigma as follows; Personalised Stigma, which measures men's 'awareness of social attitudes about gay people' and their perceptions of 'the potential social consequences related to being gay' and Concealment Stigma, which measures 'the extent to which participants disclose their sexual orientation and how worried they were about others finding out they were gay'.

- Reliability analysis using Cronbach's Alpha suggested that the Gay-Related Stigma Scale and the Personalised Stigma and Concealment Stigma sub-scales demonstrated good reliability amongst this population.

- Overall men's average score on the Gay-Related Stigma scale equated to 'disagreeing' that they experienced stigma for each item on average, meaning that overall men did not feel they experienced gay related, personalised or concealment stigma.

- Younger men reported significantly lower levels of gay-related and personalized stigma than older men.

- Gay identified men reported significantly lower levels of gay related and personalized stigma than bisexual/straight identified men.

- Men with a regular female partner reported significantly higher levels of gay related and personalized stigma than single men or men with a regular male partner. This effect is likely to be tempered by the fact that fewer MSM with a regular female partner are likely to be open or 'out' about their sexuality, which will impact upon gay-related and personalized stigma scores.
- Men with financial worries reported significantly higher gay-related and concealment stigma than men with no financial worries.

Chapter 11 Alcohol, Recreational Drug use and Chemsex

- Around two thirds (67.8%) of MSM in the SMMASH2 study are regular drinkers, that is, they consume alcohol on a weekly basis or more.
- The Fast Alcohol Screening Tool (Meneses-Gaya et al., 2010) was designed to measure alcohol misuse during a clinical interaction with a client in order that a brief alcohol prevention intervention may be delivered. 'Hazardous drinking' is indicated when participants say they consumed ≥ 8 units of alcohol on one occasion at least weekly on average, or did so at least monthly and reported another high risk alcohol-related issue (i.e. they were unable to remember a previous nights' behaviour or failed to do what was normally expected of them because of their alcohol consumption, or that a friend/relative/health worker reported concerns about their drinking).
- Using the Fast Alcohol Screening Tool, one third of MSM (32.9%) in Scotland were assessed as 'hazardous' drinkers, who would therefore benefit from a brief intervention to reduce their alcohol intake. Men in NHS GGC (39.4%), younger men (16–25 years, 39.0%; 36–45 years, 35.7%) and single men (36.5%) were all significantly more likely to report hazardous drinking.

- Levels of recreational drug use (both legal and illicit) were relatively common amongst MSM in Scotland, however, this depended strongly on the type of drug considered. Most men had ever tried poppers (64.0%) and/or cannabis (53%) and one third (36.0%) had used erectile dysfunction medications, one quarter had tried ecstasy (24.5%) and cocaine (24.4%) and one fifth (21.1%) had tried amphetamines. Fewer men had ever tried new psychoactive substances (12.7%) and/or chemsex drugs, including crystal methamphetamine (4.7%), mephedrone (9.8%), GHB/GBL (9.2%) and ketamine (12.0%). Finally, experience of injecting illicit drugs (2.7%) and using crack cocaine (2.6%) and heroin (2.0%) was rare.

- Recent recreational drug use was less widespread, though again a similar decreasing prevalence by each drug was seen. Whilst over one quarter (27.9%) of men had used poppers in the last month, erectile dysfunction medication (16.3%) and cannabis (8.9%) use was less common. Other illicit drugs including cocaine (3.6%), ecstasy (3.5%), mephedrone (2.6%), GHB/GBL (2.0%), amphetamines (1.8%), crystal methamphetamine (0.9%) and ketamine (0.9%) were used by small proportions of this sample, and just a few men reported recent crack cocaine (0.5%) or heroin (0.3%) use.

- Two measures of illicit drug use were calculated; 14.2% of men reported taking any illicit drug(s) in the past 4 weeks, and only 8.2% reported taking illicit drugs other than cannabis recently. Men in NHS GGC (17.9%), younger men (16-25 years, 16.5%; 26-35 years, 19.3%; 36-45 years, 17.6%) and men with financial worries (16.3%) were significantly more likely to report taking any illicit drug(s) in the last 4 weeks. Similarly, men in NHS GGC (11.8%) and NHS Lothian (9.7%), and younger men (16-25 years, 12.3%; 26-35 years, 11.1%; 36-45 years, 10.0%) were significantly more likely to report taking illicit drug(s) other than cannabis in the last 4 weeks. As such, whilst experience of illicit drug use amongst MSM in Scotland is common (49.0%), a small proportion are using illicit drugs on a regular and recent basis.

- Crystal methamphetamine, mephedrone, GHB/GBL and ketamine are typically referred to as 'Chemsex' drugs. They can be used to enhance sexual feelings, pleasure, appetite and reduce inhibitions and fuel long sexual sessions often with multiple partners. Chemsex drug use in the last year was uncommon in this population (Crystal methamphetamine, 2.3%; GHB/GBL 4.3%; Ketamine, 3.3%), although almost 1 in 20 men (5.4%) reported Mephedrone use in the last year. Injecting chemsex drugs at sex parties was very rare (1.5% in the last year). Most men who used chemsex drugs, said they did so mainly, but not exclusively, for sexual purposes. About 20-25% of chemsex drug users said that they used chemsex drugs for most of the sex they had. In concert, these data suggest there are a very small group of MSM in Scotland who actively practice chemsex.

Chapter 12 Social And Sociosexual Media Use

- Participants in the SMMASH2 study were recruited via sociosexual media and apps. As such it is likely that the social media use of this sample is not reflective of the wider community of gay and other MSM. Unsurprisingly, this sample of MSM are highly active social media users.
- Facebook use is nearly ubiquitous, with almost two-thirds (65.5%) using Facebook on a daily basis and over three-quarters (77.0%) doing so at least weekly. Fewer than 1 in 5 (17.7%) said they did not use Facebook. Younger (16-25 years, 95.2%; 26-35 years, 88.1%), gay identified (79.0%) and single men (78.7%), alongside those with financial worries (80.4%), were significantly more likely to use Facebook frequently (at least weekly). Most participants also used other types of social media, with Twitter, Tumblr, Instagram and LinkedIn all used by over one third of participants in the past year. Similarly, over half of men said they used 4 or more social media types in the last 12 months.

- Most participants also use gay sociosexual media websites on a daily (39.8%) or at least weekly (72.6%) basis. Older men (36-45 years, 75.9%; 46+ years, 84.1%) and those with a regular female partner (80.4%) were significantly more likely to report frequent gay sociosexual media website use. Moreover, the majority of participants had been using gay sociosexual media websites for over 5 years (68.5%). Gaydar (50.9%), Squirt (34.4%), FabGuys (30.8%) and Recon (20.7%) were the websites most often used to meet male sex partners, which partially reflects that the sample were recruited from three of these sites (Gaydar, Squirt, Recon). In contrast, explicitly bareback websites were used by only around 7% of participants to meet male sex partners as were 'heterosexual' websites (e.g. Plenty of Fish, 7.8%; Zoosk, 1.9%). Over half (54.0%) of men said they used multiple websites to source male sex partners but few used ≥6 sites (4.2%). Therefore, most (74%) participants used between 1 – 5 websites to source male sex partners.

- Whilst fewer men (67.6%) use sociosexual media apps weekly compared to websites (72.6%), more men use apps (46.5%) than websites (39.8%) on a daily basis. Younger (16-25 years, 80.9%; 26-35 years, 77.4%; 36-45 years, 70.2%), gay identified (71.8%) and single (76.1%) men, alongside those with financial worries (73.0%), were significantly more likely to report weekly gay sociosexual media app use. In contrast to websites, only one third (27.4%) had been using gay sociosexual media apps for over 5 years. This reflects the relative recency of apps over websites, with the newer technology more frequently being adopted by younger men (although well over half of the oldest 46+ age group reported weekly sociosexual media app use). Grindr (61.2%), followed by Gaydar (31.1%), Scruff (28.5%), FabGuys (19.3%), Squirt (19.2%), Recon (18.1%) and Growlr (17.8%) were the most frequently used apps, again reflecting the recruitment strategy of this survey, although Grindr was by far the most frequently used of these apps. A sizeable proportion of men (1 in 7) use 'heterosexual'

sociosexual media apps but no explicitly bareback sites exist due to app market place restrictions. It was common for men to report using multiple sociosexual networking apps, with over half (56.3%) using 2 or more apps, but only 10% reporting using 6 or more, in the last 12 months.

- In concert, whilst social media, sociosexual media websites and apps use is common amongst this group of MSM, this is patterned by certain sociodemographic differences, primarily around age, partner type and financial worries. Using multiple sociosexual media websites and/or apps is usual, but an element of 'brand loyalty' is apparent, where few men use 6 or more websites or apps.

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End of Report
