

BMJ Open 'Repeat testing without having 'the talk' is not meaningful' – healthcare providers' perceptions on finding a balance between *Chlamydia trachomatis* testing and primary prevention strategies. A qualitative study in Stockholm, Sweden

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ABSTRACT

Objectives *Chlamydia trachomatis* is a public health problem. Widespread testing and re-testing after a sexually transmitted infection (STI) is recommended to contain the epidemic and has been adopted by many countries. A recent study in Stockholm found that serial testing was used as a substitute for condom use by youth presenting at the Youth Health Clinics (YHC). The objectives of this study are to explore frontline healthcare provider's perception of youth testing repeatedly for *C. trachomatis* as a substitute for condom use and their views on how this might be addressed.

Design Qualitative study, in-depth interviews and analysed using content analysis.

Setting YHC in Stockholm County, Sweden.

Participants Healthcare providers (HCPs) working at the YHC.

Findings Testing used as a method of prevention of STIs by youth has been a well-known phenomenon observed by HCPs at the YHC. Despite frustration regarding this behaviour, attitudes towards youth visiting the clinics repeatedly were overall positive. It is seen as an opportunity to reach youth with primary prevention strategies. Time for in-depth conversations with the youth is considered essential to understand the various reasons behind sexual risk-taking and to tailor counselling accordingly. Introducing concepts of self-compassion and self-respect in relation to sex is thought of as an effective intervention to improve sexual health among youth.

Conclusion HCPs' views on testing repeatedly for *C. trachomatis* as means of prevention, range widely from seeing this as 'a positive strategy for *C. trachomatis* prevention' to 'a waste of healthcare resources'. There was a more unified view on how this should be addressed. Testing without having time to problematise sexual risk-taking was seen as meaningless. In depth, one-one counselling was deemed important. While scaling up accessibility to testing services, primary prevention strategies must not be neglected.

Strengths and limitations of this study

- While repeated testing for Chlamydia as a substitute for condom use has been previously described in the literature, this is a first exploration of healthcare provider responses to this.
- Study participants were selected using heterogeneous sampling so that healthcare providers of different ages, varying duration of professional practice and experience of working in different socioeconomic areas were represented.
- Individual interviews provided individual perspectives on the subject; additional focus group discussions might have added additional facility-level perceptions.
- The study was performed in Stockholm County where testing services for *C. trachomatis* are well-implemented, thus findings from this study can only be transferable to other similar settings.

INTRODUCTION

The WHO estimates that there are 350 million new cases of curable sexually transmitted infections (STI) including *Chlamydia trachomatis* annually.¹ *C. trachomatis* is one of the most common STIs and can increase the risk of pelvic inflammatory disease, ectopic pregnancy and infertility.² History of a *C. trachomatis* infection is a risk factor for a new infections;^{3–6} reinfection levels of 13.9% among women⁷ and 11.3% among men have previously been described.⁸ Reinfection is seldom due to failure of treatment but commonly the result of a new infection from a different partner.⁹ Accordingly, re-testing within 3 to 6 months after treatment is recommended in



several countries.^{10–13} However, numerous studies have concluded that, in order to decrease *C. trachomatis* infection rates, testing strategies must be improved^{14 15} and must include risk-reduction counselling⁵ and behavioural change interventions.¹

STI control programmes are designed to prevent first and repeat infections, and to prevent/treat complications.² *C. trachomatis* control policies vary widely worldwide, ranging from non-existent to routine national screening programmes. For example, the UK annual *C. trachomatis* testing is recommended for sexually active people under the age of 25 years.^{11 16 17}

Sweden has a long tradition of widespread *C. trachomatis* testing. Free testing and treatment are available at Youth Health Clinics (YHC) across the country where care is provided by midwives and social counsellors that serve a population ranging in age from 12 to 23 years. The Swedish model has often been upheld as an example of success in the area of STI control.¹⁸ Nevertheless, *C. trachomatis* rates have increased over the past two decades, with youth disproportionately affected.¹⁹

Routine re-testing after treatment for *C. trachomatis* is not recommended in Sweden.²⁰ However, a recent study reported repeat testing for the infection among 42% of youth using public YHC in Stockholm.²¹ The same report also found high *C. trachomatis* rates among repeat testers, indicating that testing alone did not decrease risk-taking behaviours.²¹ One explanation is that re-testers used repeat testing as a substitute for condom use, that is, testing for *C. trachomatis* was viewed by them as a means of prevention.²² The notion of ‘repeat testing to stay safe’ has not previously been explored among healthcare providers (HCPs). In order to create a successful programme for *C. trachomatis* prevention and control, it is important to consider the experience and opinions of frontline HCPs who interact with youth in their everyday work. Policies created ‘bottom up’ compared with ‘top down’ can be expected to be implemented successfully.²³

Objectives

We aimed to explore HCPs’ perceptions of youth who repeatedly use testing as a means of prevention for *C. trachomatis* at the YHC in Stockholm County as well as provider views on how this might be addressed.

Theoretical framework

The transtheoretical model (TTM) was used to understand our qualitative data.²⁴ Youth moving towards a healthier behaviour (increased condom use) might transition through the different stages described in the TTM. During the *pre-contemplation* phase, the person is not prone to change. In the *contemplation* phase, the person is ready to change behaviour, while in the *preparation phase*, the individual has begun taking steps towards a change. Changed behaviour is observable in the *action* phase, and finally, in the *maintenance* phase, the person works to prevent relapse.²⁴

METHODS

Setting

This qualitative interview study was conducted among HCPs working at YHCs in Stockholm, Sweden. Sexual health and development for youth aged 12 to 23 years is supported by the YHC.²⁵ HCPs employed at the YHCs include midwives, social counsellors and physicians. Sweden has a network of 220 clinics, 33 of which are in Stockholm.^{26 27} Annually, 110 000 visits by 56 000 unique visitors are made to the Stockholm County YHCs.²⁷ In 2017, a total of 9445 cases (409/100 000 inhabitants) of *C. trachomatis* were identified in Stockholm,¹⁹ with 80.3% of the cases found among ages 15 to 29 years.¹⁹

Prevention of STIs in Sweden

National laws and regulations^{28 29} determine preventive work in Sweden³⁰ and guidelines focus on testing, treatment and contact tracing. In Stockholm County, the guidelines for prevention include promotion of accessible testing after unprotected sex. Providers at the YHCs receive frequent continuing-education opportunities on STI prevention among youth.²⁰ Once a confirmed diagnosis is obtained, contact tracing is mandatory.²⁸

Participant selection

Study participants were selected using heterogeneous sampling³¹ meaning HCPs with varying of duration of professional experience, professional qualifications and age ranges were represented. They were contacted via e-mail by AN, provided information about the study, a substudy in a PhD project and about the researcher. Interested participants were invited for an in-depth interview. One person approached by the researchers refused to participate due to time constraints. Twelve interviews (10 female and two male respondents) were conducted at 10 YHCs. The 10 different YHCs were selected so that different socioeconomic areas of Stockholm would be represented. HCPs ages ranged from 34 to 62 years, with 1.5 to 21 years of professional experience working at the YHCs. Most interviewees were midwives (n=11). This cadre interacts most closely in relation to STI testing with the youth at the YHCs. One interviewee was a social counsellor with 14 years of experience with young men coming to test at the YHC.

Data collection

The in-depth interviews were conducted in a quiet room at the YHCs, the ‘home-clinic’ of the participant. The first author (AN) conducted, audio-recorded all the interviews and made field notes. The interviews lasted from 29 to 44 min, with an average duration of 32 min. The interviews were conducted from January 2017 to March 2018, and were transcribed verbatim in Swedish.

A semi-structured interview guide with open-ended questions was used. Themes explored included: HCPs’ understanding of repeat testing for *C. trachomatis*; sexual risk-taking; and how the issue of repeat testing as prevention could be addressed (online supplementary appendix

Table 1 Example of data analysis process: meaning unit, condensed meaning unit, code, category and theme

Meaning unit	Condensed meaning unit	Code	Category	Theme
'Those who come only to test, come to the drop-in hours and then you don't have the time to talk'	Testers coming to drop-in hours, when there is no time to talk.	Problematising not possible at drop-in.	Drop-in services versus good quality meetings.	Re-testing without having the talk is not meaningful.

1). Follow-up questions, probes and interpretive questions were used.³² Topics not included in the interview guide but arising during data collection were explored in subsequent interviews. Saturation was judged to have been achieved after 12 interviews.³³

Data analysis

Data was analysed using content analysis as described by Graneheim and Lundman.^{34 35} Line-by-line coding was performed using OpenCode 3.4.³⁶ The meaning units were shortened into condensed meaning units. Each unit was labelled with a code and compared. Categories emerged from the coded data in parallel analysis and mutual in-depth discussions between two researchers (table 1). Three different themes representing a high level of abstraction were identified (online supplementary appendix 2).

Patient and public involvement

Patients and the public were not involved in the design, planning or reporting of the study.

Findings

From the discussions with the 12 HCPs, we identified three themes and underlying categories as shown in table 2. The first theme described the HCPs attitudes towards re-testing and their experiences of providing care for youth. The second theme explored sexual risk-taking and obstacles to safe sexual practices. The third theme described the challenges and opportunities promoting safe sex HCPs face in day-to-day work.

'Re-testing without 'having the talk' is not meaningful' *Problematising repeat testing as means of prevention*

Repeat testing for *C. trachomatis* as a sole prevention strategy was a well-known phenomenon among HCPs, who described that youth perceived themselves as sexually 'responsible' by just testing. Furthermore, they were aware of the prevailing notion among youth that 'testing is equally as safe as using a condom'. HCPs described this notion as 'delusional'. Still, repeat testing was perceived by HCPs as a positive indication of the intent to minimise effects of risky sexual behaviour.

The youth's willingness to visit the clinic on a regular basis, even if to test repeatedly, was seen as a sign of success in itself by HCPs. It was nevertheless a consistent opinion that the testing itself is not protective. Testing without having the time to talk was described as not meaningful.

I believe that everyone needs some kind of response or guidance on how to lead their lives. So I think it is dangerous to just test and leave it at that. The 'talk' is key, I believe. (HCP 2, social counsellor, 14 years' experience from YHC)

Without being judgemental, the importance of problematising repeat testing as means of prevention, including the number of tests taken by one person, was emphasised. Repeat testing, it was suggested, should initiate the process of routine assessment of a youth's sexual behaviour.

They (youth) want a guarantee that it is ok to go on living the way they do. There is no real tendency to change behaviour and that is why it is so important to

Table 2 Themes and underlying categories

Theme	Categories
'Re-testing without having the talk is not meaningful'	Problematising repeat testing as means of prevention Drop-in services versus good quality meetings Repeat visits—an opportunity for primary prevention strategies
'Understanding reasons behind risky sexual behaviour is essential for preventive work'	Unhealthy sexual life overlaps with other risk factors Gender, responsibility and condom use
'Having the talk: reaching out to promote condom use—challenges and opportunities'	Nothing to fear in relation to unprotected sex—challenges promoting safe sex Introducing self-reflection: opportunities promoting safe sex Condom promotion as a sign of self-respect, self-confidence and self-compassion Condom use should be taken for granted—not the other way around

take the opportunity to talk to them. So that they do not only just test. (HCP 1, midwife, 21 years' experience from YHC)

The drop-in services versus good quality meetings

Several HCPs underlined that repeat testers attend the drop-in hours rather than making a regular appointment. This was seen as problematic, as drop-in meetings are short and focussed on providing quick help. It was argued that the youth who test repeatedly deliberately choose the drop-in hours as it allowed them to stay anonymous and obviated the need to invest time to problematise their behaviour. One HCP commented:

I am thinking about the drop-in hours that are so popular, youth are able to come for short visits. There is no time to really discuss their lifestyle or why they come and test so frequently. Many youth might find it really convenient that there is not so much time to talk, that they have the possibility to go to different clinics and be quite anonymous. I believe there is a risk with that. (HCP 1, midwife, 21 years' experience from YHC)

HCPs believed accessibility to testing services was an important part of secondary prevention, but also that easy access provides false security about re-testing instead of condom use. Furthermore, re-testing for *C. trachomatis* repeatedly as means of prevention was seen as a wasteful use of healthcare resources. It was expressed that youth today are negligent and that the health services 'cover up' for their carelessness.

I am prepared to pay tax for a lot of things, but I am not really keen on paying tax just so people can let go of their own responsibility, let the government take on the responsibility and pay for all of those tests. (HCP 2, social counsellor, 14 years' experience from YHC)

Repeat visits—an opportunity for primary prevention strategies

HCPs reflected that youth attending the clinic on a regular basis for testing was positive because it provided a window of opportunity for them to discuss their health with a health professional. Repeat visits and tests might also be an indicator of increased stress or anxiety. In slowly building trust and alliance, the YHCs could move towards their long-term goal of ensuring improved sexual behaviour.

I think that it is our only way of reaching our goals. Of course, it is a risky behaviour (testing as means of prevention), but it is still a way of taking care of oneself. And it is also the way of...we must keep on trying, and problematising... and maybe we will reach all the way eventually. It might not be during the YHC period, but we might plant a thought. I believe it is more long-term. Eventually, we might find those who need us the most. (HCP 8, 11 years' experience of working at the YHC)

'Understanding reasons behind risky sexual behaviour is essential for preventive work'

Unhealthy sexual life overlaps with other risk factors

Sexual risk-taking among youth was described as having sex without condom and/or contraceptives. Having many temporary partners were not seen as problematic if condom was used. Nevertheless, it was discussed that having many sexual partners could be a sign of needing self-confirmation or intimacy problems. In addition, it was underlined that intoxication often resulted in sexual risk-taking, and that risky sexual behaviour (and therefore repeatedly testing) is connected to general risk-taking and social vulnerability.

Lifestyle discussions are essential with this group of youth as they often have other risk behaviours; alcohol, drugs, low self-esteem, difficulties to relate to others. (HCP 11, midwife, 3 years' experience from YHC)

Accordingly, finding the underlying reasons behind risky sexual behaviour was essential for STI prevention.

Gender, responsibility and condom use

Our informants discussed that, in order to improve condom use, gender differences in the responsibility for using condoms should be addressed. There was a perception that young women were tired of carrying the responsibilities related to sexual health. The informants discussed that women worry about fertility and contraceptives, and men must be taught to take responsibility of condom use as a way of creating equal responsibilities.

All agree, or many agree, that condom use should be a shared responsibility. But in practice, I think the responsibility is on the girl. (HCP 9, midwife, 1.5 years' experience from YHC)

HCPs recognised that attracting young men to the clinics was a challenge. Young boys come to the clinic to get condoms. But frequently, that curiosity and fascination about condoms is eventually lost. It was argued that primary prevention strategies should therefore reach men from an early age. Being prepared to receive young men once they visit the clinic without an appointment was mentioned as important. It was also reported that men often respond positively to in-depth conversation.

They are curious (the young boys). I feel that they are motivated and long for information. I think individual meetings are better than group meetings for young men. (HCP 6, midwife, 2 years' experience from YHC)

'Having the talk: reaching out to promote condom use—challenges and opportunities'

There is an absence of fear in relation to unprotected sex—the challenges of promoting safe sex

HCPs mentioned that youth today had nothing to fear when having unprotected sex as it is perceived that 'everything is treatable and fixable'. Additionally, it was

described that repeat negative tests can lead to increased sexual risk-taking since there was little incentive for behaviour to change. Reflections regarding the HIV fear in the 1980s and 1990s were made in contrast to youth today who do not perceive HIV as a serious threat.

It is not that they (youth) are careless...well they just have the opportunity (to have unprotected sex), and then they use that opportunity. They are not more careless; it is just their way of exploring when (they believe) there are no great risks. I mean everything is treatable in their world. I think that the brain is that simple really, if you don't have to then why should you? (HCP 4, midwife, 6 years' experience from YHC)

Introducing self-reflection: opportunities promoting safe sex

Interviewees highlighted that taking the time to discuss sexual risk taking during the appointment with the youth was paramount to STI prevention. It allowed the HCPs to identify the reasons behind poor condom use, to discuss them with the youth and to foster change. However, HCPs thought that the wish to reduce risk must come from the youth's own feelings and understanding, and not from the HCPs demands. Repeat testing was viewed as an opportunity to facilitate such discussions, as a starting point in the counselling. By introducing self-reflection, it was thought that the YHCs could make a difference, at least in the long-term.

Sometimes it can be a good thing that they had many partners. You can ask about condom use. When did you use a condom... ok why did you use a condom that time... You can discuss around this matter, not just that they used a condom but what happened before, what happened during the sex, how did they feel afterwards. Did they worry or not worry afterwards? (HCP 7, midwife, 6 years' experience from YHC)

Condom promotion as a sign of self-respect, self-confidence and self-compassion

Promotion of condom as a way of gaining self-respect stood out. Exploring those times when a condom was used was mentioned as important when analysing practical obstacles. Going through possible condom use scenarios was also mentioned as a successful.

I think they (youth) must think prior to the situation, and practice prior to the situation—because I usually ask 'I see that you use a condom each time' and then I ask 'how come?' Those persons have an inner conviction, they think 'if you want to have sex with me you must use a condom', it's not negotiable because 'I always use a condom'. To get youth into that kind of thinking, I sometimes act in the room, I play a scene or they get to imagine a scene. Then I ask, 'When should you ask about the condom?, how should you say it?, how will it feel in your body when you say it? They should respect their own body and have self-respect. If you don't have it (self-respect)

you have to fake it. Just practice. (HCP 3, midwife, 5.5 years' experience from YHC)

HCPs argued that condom use must be seen as a sign of self-respect and compassion and that this view should be promoted at YHC. That could be done by conveying to the youth that condom users are viewed by their peers as experienced, mature and responsible persons.

Condom use should be taken for granted—the current assumption is that condoms will not be used

HCPs agreed that an attitude change towards condom use is needed. One must be able to talk about condoms being a natural part of social life. Usage should be taken for granted. Actions to reach this goal were suggested, involving different stakeholders such as parents, schools and the healthcare systems. Adults, including parents, must be able to discuss condoms in a natural way. HCPs highlighted the need of repetitive information and sexual education from a young age. Accessibility to condoms in school and training on how to use a condom was thought to be a way forward. Outreach efforts to schools and youth centres could be expanded. Accessibility in society was also presented as a possible way of success; that is, making condoms visible in clubs, pubs, restaurants and other public places. Debunking the myths about condoms and supporting a positive narrative about condoms could be done by promoting a variation of condoms, size and fitting.

DISCUSSION

Testing as means of STI prevention by youth was a well-known phenomenon among HCPs at the YHCs. Despite frustration at the use of testing repeatedly as a substitute for condom use, HCPs were overall positive to youth attending the clinic, even if for repeated testing. HCPs viewed this as an opportunity to reach youth with primary prevention strategies. The notion that re-testing is as safe as using a condom was previously reported by our research team²² and was confirmed by HCPs in the present study.

Repeated testing was viewed both in negative and positive ways. On the one hand, HCPs described the repeat testing as a flawed substitute for the use of condoms and as being wasteful of healthcare resources. Rather, they suggested that youth must assume responsibility for their sexual life instead of testing. On the other hand, repeat testing was perceived as an act of responsibility taken by the youth after an unsafe sexual encounter. However, even if the latter can be seen as positive, it has been described that repeat testing, and foremost, repeat *negative* testing, for STI (including HIV) might impair risk-reductive measures such as condom use.³⁷ This must be taken into account when counselling repeat testers.

Swedish guidelines recommend testing after unprotected sex.²⁰ It seems Swedish youth follow these guidelines as repeat testing has been identified as relatively frequent.²¹ HCPs highlighted that accessibility to testing services



might lessen responsibility on the individual for their own behaviour. The understanding by youth that testing is as safe as using condoms has negative effects on condom use,²² and this is why testing without problematising this behaviour was perceived as meaningless. Before scaling up accessibility to testing and re-testing services around the globe, 'testing as prevention' should be taken into account.^{17 38}

C. trachomatis screening has not resulted in significant decline in prevalence or reproductive tract complications.³⁹ This implies that repeated testing for *C. trachomatis* might be indicative of systemic failures in finding successful sexual health interventions improving condom use.^{40–42} Effectiveness of behavioural interventions in sexual health promotion are debated^{43–45} and efficient approaches to control the *C. trachomatis* epidemic are still to be defined.¹ Additionally, it might be perceived to be easier to scale up secondary rather than primary prevention. Nevertheless, with the increasing reports on emerging antimicrobial resistance for *Neisseria gonorrhoeae* treatment,^{1 39 46} re-focussing on primary prevention is essential to avoid infections in the first place.

Despite these and other ongoing concerns, HCPs did see the use of repeat testing for *C. trachomatis* as an important opportunity to reach youth with primary prevention. Time for in-depth and reflective communication was considered essential in reaching the goal of sexual health.

However, even in this context, there is room for improvement. In a population-based survey among youth in Sweden, <50% reported having had a discussion on risk in relation to testing.⁴⁷ Preventive work was described as a process, where the YHCs is an important stakeholder, but other parts of society such as parents, school, media and peers must be involved in order to improve sexual health and increase condom use. The multilevel perspective, involving individual, family and community, as well as the multicomponent perspective, involving educational and behavioural interventions, were recently emphasised in a systematic review on successful sexual health promotion programmes.⁴⁸

Primary prevention work was described by the HCPs at the YHCs as a long-term process corresponding to the different stages of the TTM.²⁴ Youth who attend the YHC for testing, and who perceive the test as comparable to using a condom in terms of safety could be considered to be at the pre-contemplative stage or the contemplative stage (ie, not being totally ready for a change of behaviour). HCPs in our study expressed confidence that by taking time, individualising the counselling session and problematising behaviour, it would be possible to support a transition through the different stages of change, thereby empowering youth to move from unhealthy to healthy sexual behaviour. This transition could be made later in life, as primary prevention results were not always visible in the short-term. Working towards a longer-term solution requires spending sufficient time at each meeting with the youth. Sufficient time was reported as important for the quality of the healthcare delivered,⁴⁹ and insufficient time as a barrier in STI preventive care.⁵⁰ Additionally, interacting over a long period has proven superior to one-off single-session interventions.⁴⁸

HCPs reported that condom users were determined and possessed a certain level of self-confidence. This notion of condom users as self-confident was used in counselling. This was also discussed in another qualitative study among HCPs where confidence and self-esteem to negotiate condom use were reported as key elements to increase condom use.⁵¹ Understanding the individuals' barriers to condom use, and the reasons behind risky sexual behaviour were communicated as crucial in the primary preventive meeting.⁵¹ HCPs were aware of risky sexual behaviour coinciding with general risky behaviour^{52 53} and therefore emphasised the need to probe for and elaborate lifestyle-related issues

Gender equality in relation to sexual health was discussed. Attracting young men to the clinic is important. For young men, barriers to sexual health have been described as a lack-of-consequence thinking, and overall, the power of peer-regulated beliefs on what is considered acceptable in terms of men seeking healthcare⁵⁴ findings consistent with this study. Creating opportunities for the promotion of sexual health among young men include building a unique HCP-youth relationship⁵⁴ that maintains a welcoming, respectful and non-judgmental environment for youth.⁵⁵

Strengths and limitations

Several methods were used to ensure trustworthiness. A detailed description of the study setting was provided to ensure transferability of our results. During data collection, we used interpretative questions to validate our understanding of the data.⁵⁶ During data analysis, two researchers with different backgrounds (midwifery and public health) analysed the transcripts reaching consensus on codes, categories and themes to avoid preconceptions and assumptions in the interpretation. Findings in the present study were also triangulated with findings from a previous study.²² Peer debriefing was conducted to validate our finding with other researchers.

One possible limitation is that the author (AN) who conducted the interviews is also a midwife working at the YHC. In order to minimise the risk of social desirability biases/answers from the participants, the interviewees were unknown to the first author prior to the interview. Participants had received information that the interview would contain questions regarding youth who test for *C. trachomatis* and prevention strategies at the YHCs. Confirmability, that is, neutrality of the findings, was assured by constant reflection and feedback discussions within the research team.

CONCLUSION

Analysis indicated that HCPs consider repeat testing a positive strategy for *C. trachomatis* prevention if it opens up opportunities for individualised counselling on sexual and lifestyle risk-taking. Although, HCPs expressed frustration about testing as a substitute to condom use, the possibility of time to talk to the youth was described as crucial. While improving accessibility to testing services are important strategies to prevent spreading infections, primary prevention

strategies must not be neglected. In depth, one-on-one counselling (instead of short meetings) were regarded as key to supporting healthy sexual behaviour. Findings from this study will have implications in developing and implementing successful primary and secondary prevention strategies.

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Contributors AN, MS, AdC, KG-D and JB designed the study. AN collected the data. AN and MS analysed the data and drafted the manuscript. AN, MS, AdC, KG-D and JB critically appraised the manuscript and approved it for publication.

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