

BMJ Open Factors influencing young men's decision to undergo health screening in Malaysia: a qualitative study

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ABSTRACT

Objectives: Uptake of health screening is low in men, particularly among those aged <40 years. This study aimed to explore factors that influence health screening behaviour in younger men.

Design: This qualitative study employed an interpretive descriptive approach. Two trained researchers conducted in-depth interviews (IDIs) and focus group discussions (FGDs) using a semi-structured topic guide, which was developed based on literature review and behavioural theories. All IDIs and FGDs were audio-recorded and transcribed verbatim. Two researchers analysed the data independently using a thematic approach.

Participants and setting: Men working in a banking institution in Kuala Lumpur were recruited to the study. They were purposively sampled according to their ethnicity, job position, age and screening status in order to achieve maximal variation.

Results: Eight IDIs and five FGDs were conducted (n=31) and six themes emerged from the analysis. (1) Young men did not consider screening as part of prevention and had low risk perception. (2) The younger generation was more receptive to health screening due to their exposure to health information through the internet. (3) Health screening was not a priority in young men except for those who were married. (4) Young men had limited income and would rather invest in health insurance than screening. (5) Young men tended to follow doctors' advice when it comes to screening and preferred doctors of the same gender and ethnicity. (6) Medical overuse was also raised where young men wanted more screening tests while doctors tended to promote unnecessary screening tests to them.

Conclusions: This study identified important factors that influenced young men's screening behaviour. Health authorities should address young men's misperceptions, promote the importance of early detection and develop a reasonable health screening strategy for them. Appropriate measures must be put in place to reduce low value screening practices.

INTRODUCTION

Most healthcare systems and policies focus on addressing the needs of children,

Strengths and limitations of this study

- This study focused on the health screening behaviour of young working men in the community, a frequently overlooked population.
- We conducted the study with men in the community rather than those attending clinics as this group of men tend to underuse health services.
- We captured views, experiences, barriers and facilitators to health screening from men across different ethnic groups, age, job positions and screening behaviour.
- Both in-depth interviews and focus group discussions were used to triangulate the data and the study was informed by behavioural theories.
- This study was conducted in an urban setting where men had easy access to healthcare services and most of the participants were from higher level of education. Therefore, the findings may not be transferable to other populations in Malaysia.

adolescents, elderly people and women; very few look into the healthcare needs of men, particularly young men.^{1–5} This is despite clear evidence showing that men experience significantly more premature deaths than women.^{6–11} Statistics have shown that there is a sharp rise in morbidity when men reach 40 years of age. For instance, 10% of men aged 20–35 years have hypertension compared with 40% of those aged 45–54 years.^{12–13} Likewise, for diabetes, in 2008 3.7% of American adults aged 20–44 years had diabetes compared with 13.7% of those in the 45–64 age group.¹⁴ The prevalence of diabetes among younger men is rising.¹⁵ This pattern is also observed in other parts of the world.^{16–17} In addition, more young men than young women die prematurely across the world.³ In the USA, young adults, men and Asian Americans are reported to be less health conscious, less likely to seek treatment and have poorer disease control than older adults, women and those from other ethnic groups.^{18–19} The increasing disease

burden in young men has resulted in loss of productivity as well as increased healthcare cost.^{15 18 20–22}

It is therefore important to identify risk factors and detect diseases in young men while there is still a window of opportunity to intervene before the disease develops or progresses. The US Preventive Services Task Force (USPSTF) recommends screening in younger adults, including men, for hypertension, diabetes, sexually transmitted infections (STIs), HIV, hepatitis, dyslipidaemia, depression, smoking, alcohol and obesity.²³ These recommendations, however, need to be personalised according to individuals' risk factors such as ethnicity, past medical history, family history and lifestyle to avoid medical overuse and overdiagnosis.^{24–26}

Currently, health screening uptake in young men remains low in Malaysia as well as globally.^{27–31} The American Time Use Survey found that men aged 25–44 years spent most hours in work-related activities and the least time for personal care, including screening.³² Compared with women, men are less likely to attend health screening,^{33–35} which may explain why men have poorer health.^{9 10} Many studies have looked at factors that influence screening uptake in older men; however, few have explored young men's decision to go for screening, particularly for non-STI conditions such as high blood pressure, dyslipidaemia, obesity, smoking and alcohol.^{36–39}

This qualitative study therefore aimed to explore factors that influence health screening behaviour among young working men in Malaysia. Malaysia has a dual-sector (public and private) healthcare system and her population consists of different ethnic groups including Malays, Chinese, Indians and aboriginal groups. In this era of globalisation with active migration across the world, it is important to understand the health-seeking behaviour of different ethnic groups, and the gender differences within each ethnic group.

METHODS

Study design and context

This study employed the interpretive descriptive approach to explore the health screening behaviour of young men.⁴⁰ The interpretive approach was used to gain a deeper understanding of young men's screening behaviour with regard to their age, ethnicity, job position and screening behaviour.⁴¹ Semi-structured in-depth interviews (IDIs) and focus group discussions (FGDs) were conducted in Kuala Lumpur, the capital city of Malaysia, which is a fast-paced city with a highly competitive working environment. In this study, men working in the banking industry were chosen because of the stressful and sedentary nature of their job. They are a group of 'hard-to-reach' men in the community, who are less likely to use health services despite having easy access to them. Most men in this study subscribed to health insurance covered by the bank while those from lower job positions were covered by the worker's union.

The company has panel doctors and all the staff are reimbursed for their medical expenses but not for screening. Only staff at higher positions and who have worked for a certain number of years are entitled to health screening reimbursement. All IDIs and FGDs were conducted at their work place.

This study was approved by the University of Malaya Medical Centre Medical Ethics Committee (MECID.NO: 201410701) and the study conformed to the Declaration of Helsinki.

Sampling and recruitment

Men of different ethnicities, job positions, age and screening status were recruited using purposive sampling in order to achieve maximal variation. Approval from the banking institution was sought and the human resource department helped to send invitation emails to all male staff in the organisation. The invitation emails included the purpose of the study and the details of the researchers. Men who were interested in the study contacted the researchers and interview appointments were arranged via emails. Men from the older age group were included in the study to provide triangulation of the data.^{42 43} Views from the older men are important as they could share and compare their views and experiences of health screening between now and when they were younger. They could provide input based on actual lived experiences rather than perceptions. This was particularly relevant in the context of colorectal cancer screening which is recommended for men above 50 years of age. The FGDs were delimited by job position so that the participants were comfortable to discuss and disclose their views on health screening without hierarchical influences.

Data collection

Two male researchers (CHT and CJN) trained in qualitative interviewing conducted the IDIs and FGDs. An IDI allows the researcher and the participant to discuss more personal and sensitive issues while an FGD takes advantage of group dynamics to enrich the data by enhancing group interactions. These two methods also serve as a form of triangulation to provide a comprehensive understanding of what influenced men to either attend or avoid health screening.^{42 44} Before the interviews, the participants read through the participant information sheet and the researchers encouraged the participants to raise questions about the study, which were answered accordingly. The participants were made aware that their participations were voluntary and that they could withdraw from the study at any time. We also obtained their verbal as well as written informed consent to participate in the study and for audio-recording the interview. All data were anonymised and stored in password-protected computers which could only be accessed by the researchers. During the interview the participants were asked to describe their health screening experiences, particularly the factors that

influence their decision to undergo health screening. The researchers followed the interview guide which was developed based on a systematic review of barriers and facilitators to health screening in men,³⁸ theories (integrative model, health belief model and masculinity theories),^{45–47} experts' opinions and researchers' experiences (see online supplementary appendix 1). It was pilot tested with three participants and revised accordingly. The interviews were conducted in a private room at the participants' workplace and there were no other personnel in the room during the interviews. One researcher led the interview while the other took field notes. The IDIs and FGDs were conducted until data saturation was achieved.

Data analysis

The audio-recorded interviews were transcribed verbatim, checked and analysed using the NVivo 10 software. The transcripts were not returned to the participants for comment. Two researchers (CHT and CJN) first familiarised themselves with the data by reading the transcripts and field notes of the first (IDI) and the second (FGD) interviews repeatedly. They independently assigned codes to each phrase, sentence or paragraph of the transcript based on the study objective (open coding). The codes were merged to form bigger themes interpreted based on the relationship identified between and within the codes (axial coding). Both researchers met to discuss the analysis and any differences in the coding were resolved through consensus. The analysis was also confirmed by a third researcher (AW). CHT subsequently coded the remaining transcripts and discussed any new codes that emerged with the research team. Throughout the analysis, the interpretive description approach was used by performing constant comparison to identify similarities and differences in the views and experiences of health screening among the participants. The data were interpreted in the context of the participants' age, ethnicity, job position, screening status and interview mode (IDI vs FGD). Three researchers, a professor in men's health (AW), a professor in family medicine (CJN) and a health researcher (CHT), were involved in data collection, analysis and writing up. All researchers were trained in qualitative research; CHT was trained in qualitative research and had conducted qualitative interviewing previously; CJN conducts qualitative research workshops and had published qualitative research articles; while AW is an experienced qualitative researcher and had published extensively. The researchers critically examined their own roles and challenged the interpretations of the data throughout the study to reduce potential biases.

RESULTS

Eight IDIs and five FGDs were conducted from July to November 2015. A total of 31 men participated in this study and their characteristics are shown in [table 1](#). The

Table 1 Participants' characteristics

Characteristic	N	%
Age, years		
20–29	11	35.5
30–39	10	32.3
40–49	5	16.1
50–59	4	12.9
60–69	1	3.2
Ethnicity		
Malay	14	45.2
Chinese	12	38.7
Indian	3	9.7
Others	2	6.5
Job position		
Senior manager	8	25.8
Officer	7	22.6
Sales advisor	9	29.0
Clerk	7	22.6
Education level		
Primary school	1	3.2
Secondary school	4	12.9
Certificate/diploma	8	25.8
Degree	17	54.8
Postgraduate	1	3.2
Regular screening		
Yes	13	41.9

age of the participants ranged from 24 to 64 years and 10 of the 31 were aged ≥ 40 years old. Two men cancelled the interview appointments due to a busy schedule and feeling unwell. The duration of the interviews ranged from 30 min (IDI) to 90 min (FGD) and there was no repeat interview. This study identified six factors that influenced young men's health screening behaviour: misconceptions, receptivity, life priorities, cost considerations, doctors' influence and medical overuse ([figure 1](#)). The italicised subheadings below and in [figure 1](#) indicate factors that are unique to younger men. The participants did not provide feedback on the findings.

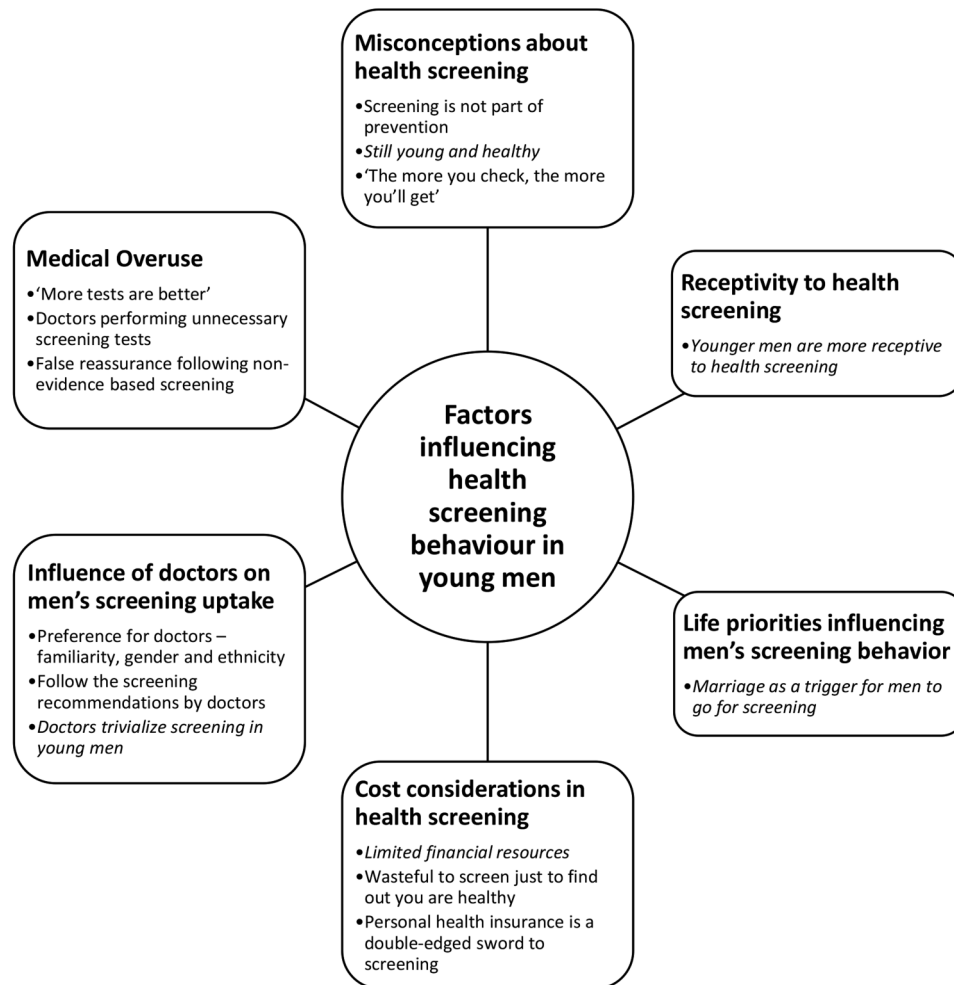
Misconceptions about health screening

Screening is not part of prevention

Young men often did not perceive screening as part of prevention, unlike health promotional activities such as exercise and diet. They could not differentiate between 'screening' and 'diagnosis'. They would go for a medical 'check-up' when they had symptoms, such as pain, or when ill. Some of them mentioned that it was the Asian culture to seek help from doctors when sick, not when they were healthy.

If I have time, I will go for check-up. If I have no time, I won't. It is fine because I am already exercising regularly. When I suddenly feel like not OK, like feeling weak, then I'll go for a check. If I feel strong, there is no need to check.

(Malay, Clerk)



*Note: Italicized items indicate unique factors in younger men

Figure 1 Summary of the factors that influence young men's health screening behaviour.

[Participant's father was diagnosed with serious diseases and he was probed whether that prompted him to go for health screening] "... Not as in like 'you may also fall sick, you got to go and check'. But instead of going for screening, I would take it as 'I need to start living a healthy life', like let's say drink a lot of water, sleep at least about 8 hours a day, something like that."

(Other ethnicity, Senior manager)

It's not like my friends in Australia and in England, they're not afraid of hospitals, they don't have this phobia of going to clinics or hospitals. But for us, even now, until today, I think it's a burden for me to go to the hospital, the thought of 'Oh, tomorrow I got to go to the hospital', you have all these negative things. I think we are in the system where we go to the hospital to get a cure, to find the remedy for it, whereas people in the developed nation, they go there because they want to prevent it (the disease).

(Malay, Senior manager)

Still young and healthy

Most younger men did not bother to go for health screening because they felt that they were still young

and healthy. They considered screening as being unnecessary and would delay going for it as long as they were 'able to perform routine activities without difficulties' and leading a healthy lifestyle.

Because we are still young, so we don't bother about screening too much.

(Chinese, Sales advisor)

The test lab sent letters asking me to go (for screening) again but I have been monitoring my diet carefully, and I can sleep, can move and can run, so I did not bother about it.

(Chinese, Sales advisor)

Screening is important but you can delay it because you do not have it [disease] yet, not feeling the pain yet.

(Malay, Officer)

'The more you check, the more likely you'll get it'

On the other hand, some younger men considered it a taboo to talk about screening as they felt that it was self-f fulfilling: 'you will get the disease if you keep thinking

and talking about it' and 'the more you check, the more likely you will get it'.

People go on to live until they're 80 and they die of something else. So, the body fixes itself, you know. So maybe what you don't know won't kill you. Sometimes I think it's self-fulfilling. When someone says you have a disease, you behave that way.

(Chinese, Senior manager)

Receptivity to health screening

Younger generation are more receptive to health screening

The younger participants mentioned that they were more open and receptive to health screening than older men because the younger generation had more access to health information and hence were more health aware.

I think we [the younger generation] are more open to suggestions. But the older generation, they are a bit resistant to new ideas. Now people have social media, these kind of things at least we got to know about, eg, free health screening campaign, 'Hey why don't we go, since it's for free'. But then for the older generation, they always felt that, 'I am ok, I am healthy, so although it's free why should I do it?' That kind of mindset.

(Malay, Officer)

But I can see the changes with my daughter. She's not worried about hospital. And anytime that she suffers from something you know, she always insists on going for a check-up and everything. So I can see the changes already. But for my generation and upwards, no. Hospital is the last place you want to go.

(Malay, Senior manager)

Life priorities

Marriage as a trigger for men to go for screening

Some men did not consider screening until they were married. Marriage made them more health conscious because they felt a sense of responsibility and wanted to stay healthy for their family. For those participants who were married, their partners played an important role in motivating them to go for health screening.

You know when I was younger, the priority was basically you work and work, you want to make more money, so I stayed over time [in the office], sometimes you sleep less, you know. All we think about is that you want more money to go and enjoy yourself. But once you get married and once you are old, the priority changes. I go for regular check-up and things like that. You worry about things, you know. Because whatever you do will impact you, your wife and also your family.

(Indian, Senior manager)

Cost considerations in health screening

Limited financial resources

Young working men, who had limited income and young families, often had financial commitments including servicing loans for their house, car and education.

This made health screening a lower priority at that stage of their life. They would only go for screening if it was free or paid by the company.

I think it also depends on a person's stage of life, like eg, I just bought a house and I need to renovate it. So asking me to go for a health check-up, asking me to spend 300 or 400 or 1000 dollars is out of the question.

(Chinese, Officer)

If the company doesn't cover for me, I would not go.

(Chinese, Senior manager)

Wasteful to screen just to find out you are healthy

Some younger men considered it 'wasteful to screen just to find out that you are healthy'. Some even reduced the frequency of screening to save cost, especially when the screening test results were persistently normal.

Because we are sure we're healthy then we don't have to spend our money to go to the clinic. For me, if I don't get a fever, my life is healthy, I can do everything, and I don't feel sick.

(Malay, Sales advisor)

You don't want to be wasting four, five thousands for a test which ends up telling you that you are healthy. Yeah. Just to fulfil your need of knowing that you are healthy.

(Indigenous, Senior manager)

I used to do [health screening] annually, then I noticed, every year I see the same report, same result, so, why waste the money? So now I delay 1–2 years and then only I do [go for health screening]

(Chinese, Senior manager)

Personal health insurance is a double-edged sword

Having personal health insurance could be a facilitator or a barrier to health screening. Some participants who had personal health insurance were reassured that the treatment cost would be covered if a disease was picked up during screening. In contrast, some considered screening as an extra financial burden and would, instead, invest in health insurance so that the treatment cost would be covered if they fall sick.

Some people won't go for check-up. Instead they might opt for insurance and felt that 'let's say anything happens, then I'm covered'. I think most of them feel that way. They considered that as 'preventive measures'.

(Malay, Officer)

Influence of doctors on men's uptake of screening

Doctors' characteristics

When considering whether or not to undergo health screening, most men preferred doctors whom they could trust, especially those with whom they were familiar (eg, a family doctor or personal friend). They also preferred doctors of the same gender, particularly among the Muslim men, because they found it easier to

establish mutual understanding and were more at ease with male doctors, particularly when discussing sexual issues or undergoing genital or rectal examination. They also preferred doctors of the same ethnicity because they shared the same language and culture.

Well my records are with him, he knows all my history so well. I just talk to him freely on my health issues. If I change to another doctor, then I will need to start all over again. This hospital will need to transfer all my records to other hospital, and then the new doctor has to read through my records again, and trying to get the picture of my health. So it takes time.

(Chinese, Senior manager)

I prefer a male doctor. It is easier for us to talk; it is about men. If the doctor is a female, you will be shy or ... is a barrier if you want to say something personal. You know the [female] doctor is professional, but for us, like us Malay, sometimes we have got 'adat-adat sopan' [polite culture]. You don't want to ... you cannot be too rude to ask the female doctor. If you got any disease on your private part, how do you want to tell her? For us ... like me, Malays, like sometime, I would not be comfortable. If I have a choice, It's better to see a male doctor, rather than a female.

(Malay, Officer)

I prefer Chinese because we can communicate easier [in Chinese], easier to understand. If it is Malay, we may not understand.

(Chinese, Sales Advisor)

Doctors' recommendations

Most men would follow their doctor's advice whether or not to take up health screening. Most doctors would recommend screening for cardiovascular disease but few recommended cancer and mental health screening, such as depression.

It's a full medical check-up, they took my blood test, and then I have to go through the stress test. So, based on the normal graph, everything is ok. But the doctor advised me to go further to angiogram, because that one [stress test] is not accurate according to the specialist, you need to go for angiogram to check.

(Malay, Senior manager)

I don't remember the doctor asked me whether I am feeling depressed or have little interest in doing things. He is focusing more on my physical health.

(Malay, Senior manager)

I'm surprised that until now the doctor has not recommended bowel cancer screening to me [this participant is above 50 years old].

(Indian, Senior manager)

Doctors' negative attitudes towards screening in younger men

Some of the younger men in this study mentioned that doctors were disinterested in engaging them in

health screening. They felt that the doctors did not listen and explain much about the tests and did not allow them to ask questions. These younger men felt that they were not taken seriously because they were young and assumed to be healthy. One young participant was asked by the doctor 'Why did you screen so much?'

The questions they asked are quite standard and the doctors seem to be disinterested. So I am not too sure whether that was a proper medical check-up. Some of them have the tendency not to listen to me and they kind of like to jump to conclusion. I wanted to ask more questions but the doctor wasn't in the mood to entertain my questions.

(Chinese, Officer)

Medical overuse 'More tests are better'

Most of the men in this study would let the doctors decide which tests they should go for. Others would choose the packages offered by commercial laboratories. They wanted 'detailed' rather than basic tests, which they felt might not be enough to assess one's health. Most considered 'more tests are better', especially if the cost is covered by the bank.

It's the completeness. Those normal tests are basically only taking blood and urine for testing. It doesn't include ultrasound, no ECG, no X-ray. Of course, the full one is definitely better.

(Chinese, Senior manager)

I think those that we have gone through [pre-employment check-up] are very superficial. If you want to do [screening], you must do those [tests] that zoom into detail, very detailed tests that check your organ functions, whether they are ok or not. I think these tests are more important, but they are very expensive.

(Chinese, Sales Advisor)

Doctors performing unnecessary screening tests

Some men lost trust in their doctors when they found out that unnecessary tests were ordered, especially if they were done just for profit. This would not only incur additional costs but might also cause harm.

These days, the medical field can be quite commercialised. Doctors would advise you to take up certain screening tests, which are expensive and unnecessary. This does prevent people from going for screening, like for some of my friends, after they saw the so-called 'unethical' practice.

(Chinese, Officer)

I have problems with this because sometimes I doubt the integrity of the physician. This fellow is trying to make money, you know, ordered all kind of things that you don't need.

(Chinese, Senior manager)

False reassurance following screening

Screening may provide false reassurance to men, especially when the test is not accurate to screen for the disease.

I have a friend, a smoker. He did his tests and everything, when he came out he said, 'Oh sh*t, my report is bad, high cholesterol, all are not good. However, the x-ray showed that my lung is perfect. Yeah! I'm a smoker but my lung is good. Healthy.' Then what can you say?

(Chinese, Senior manager)

DISCUSSION

This study identified some important factors that influenced young men's health screening behaviour. There were misconceptions about health screening, higher receptivity towards screening, life priorities, cost considerations, doctors' influence and medical overuse. Most of these factors are applicable to both younger and older men, but there are a few that are unique to younger men.

Our findings showed that the young men in our sample lacked understanding regarding health screening. They were more aware of health promotional activities such as exercising, maintaining healthy diet and adequate sleep, but did not see health screening as part of prevention. When asked about their past experience in health screening, they misunderstood it for diagnosis. This lack of understanding could be due to lack of awareness of men's health and the fact that current health campaigns often target women.^{48 49} When men are targeted, older rather than younger men are often the focus. In addition, younger men tend to have a lower risk perception of diseases as they are still young and healthy, which has also been found in other studies, where healthcare is used only when men have symptoms.^{50 51} A participant cited that 'seeing a doctor only when sick' was part of the Asian culture, which is in line with the study by Dryden *et al*²⁷ who found that this health-seeking behaviour is less prominent among non-whites. These misconceptions about health screening need to be addressed, particularly through public awareness programmes and health education.

Compared with the older generation, the younger men in this study were more aware about health and expressed a desire to take care of their health, especially among Chinese men. The younger men are more exposed to health information and therefore more receptive to health matters, probably due to accessibility to the internet. This is in accordance with the number of internet users in Malaysia, where 72.6% of internet users are aged between 20 and 44 years.⁵² A report on activity of internet usage in the USA showed that 35.5% of people who were connected to the internet searched topics related to healthcare.⁵³ In addition, studies have found that internet-based interventions are effective in changing health behaviours—for example, increased exercise time, nutritional knowledge and screening uptake.^{54–56} Thus, the internet could potentially be an

effective platform to promote health screening in this group of 'hard to reach' men.

Cost is an important consideration among young men when they make decisions about screening. Young men are at the phase of building their career and family; they often have limited income with many financial commitments. Health screening is therefore not a life priority. This observation holds true in this study, except for those who were married. Marriage was perceived as a significant life event and it changed men's attitude towards health including screening uptake. Men care more about health after marriage as they need to stay healthy to take care of their family. Therefore, marriage may be an important transition point in life to reinforce the importance of health and screening in men. In addition, many studies have found that partners play an important role in motivating men to go for health screening.^{27 37 49 57}

Doctors' recommendation is an important factor that influences men's decision to take up screening; however, in this study it was found that doctors were less likely to initiate screening in younger men. Although the USPSTF recommends screening for younger men based on their personal health risks,²³ doctors often do not recommend screening to younger men as they perceive them as a low-risk group. A qualitative study reported that doctors' intention to initiate health check-up discussions with men was related to doctors' perception of men's receptivity to health check-ups.⁵⁸ Doctors perceived that older men were more receptive to health screening and thus were more likely to discuss health screening with them. However, this pattern may be changing as young men were found to be receptive to health screening in this study, especially when its benefits had been made clear to them. Doctors' perceptions towards and practice of health screening in young men need to be realigned according to established clinical practice guidelines.

The issue of medical overuse was raised by the participants. When undergoing health screening, young men wanted more screening tests and some doctors tended to promote unnecessary screening tests. This is probably because young men did not realise that some of the tests were inaccurate and not evidence-based. Some doctors also recommended unnecessary tests for profit, which caused men to lose trust in the doctors. In addition, screening tests are often offered in packages rather than tailored according to men's health profile. For example, non-evidence-based screening tests such as a chest X-ray is still mandatory for pre-employment check-up in Malaysia. When the chest X-ray turns out to be normal, men will use it to justify their smoking behaviour. The same observation was also found in high-risk smokers who had low-dose CT for lung cancer screening.⁵⁹ Morgan *et al*²⁴ has outlined several strategies to mitigate medical overuse including constraining resources at the system level, highlighting low-value clinical services to the healthcare providers and involving patients in

shared decision-making. However, these strategies have not been evaluated. More effort and interventions need to be put in place to curb medical overuse, including screening in young men.

Masculinity did not emerge as a main barrier to screening in this group of men, albeit being probed during the interviews. This is unlike studies with communities such as African-Americans, which found that 'machismo' is a common barrier that prevents men from taking up screening.³⁶ They are expected to be 'staunch', and seeking healthcare is considered a sign of weakness.⁴⁸ However, when probed about mental health, a few men in this study cited that they did not want to be screened for mental health problems such as depression. Similar to other studies, men with high levels of gender conflict were reported to be less likely to seek help on mental health issues as opposed to physical health problems.^{60–62} Depression conflicts with the masculine norm such as stoicism; it may also increase self and societal stigma, which may explain why these men disfavour mental health screening.⁶³ Efforts should be taken to address the negative impact of conforming to the masculine norm and to encourage men to be screened and to seek help for depression in view of the high suicide rate among men. This study highlighted the need to address men's misconceptions about health screening; this requires effective interventions that provide accurate information about health screening. Men should be made aware of screening tests which are evidence-based and educated on low-value screening tests which should be avoided. In addition, future screening programmes for men must take into consideration men's life stage when developing an intervention, as men have different priorities and needs at different stages of their lives.

Strengths and limitations of the study

This study has several strengths and limitations. We focused on the health screening behaviour of young working men in the community, an important yet frequently overlooked population. The study was conducted with men in the community rather than those attending clinics as this group of men could provide views of men who tend to underuse health services. This study captured a wide range of views, experiences, barriers and facilitators to attending health screening from men across different ethnic groups, age, job positions and screening behaviour. However, most of the participants had received a higher level of education, resided in an urban setting and were working within a single banking institution. Therefore, the findings may not be generalisable to other populations and employment sectors in Malaysia.

CONCLUSION

This study highlights a number of important factors that influence the health screening behaviour of young men.

These include misconceptions about screening, receptivity towards screening, life priorities, cost considerations, doctors' influence and medical overuse. Health authorities need to address young men's misconceptions, promote the importance of early detection and develop a health screening strategy for them. Appropriate measures also need to be put in place to address the issues of medical overuse in order to reduce low-value health-care and improve the health status of young men.

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Patient consent Obtained.

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REFERENCES

1. Baker P, Dworkin SL, Tong S, *et al.* The men's health gap: men must be included in the global health equity agenda. *Bull World Health Organ* 2014;92:618–20.
2. White A. Raising awareness of men's risk of premature death. *Nurs Stand* 2013;27:35–41.
3. White A, Holmes M. Patterns of mortality across 44 countries among men and women aged 15–44 years. *J Mens Health Gender* 2006;3:139–51.
4. White A, McKee M, de Sousa B, *et al.* An examination of the association between premature mortality and life expectancy among men in Europe. *Eur J Public Health* 2014;24:673–9.
5. World Health Organization (WHO). Madrid Statement Mainstreaming gender equity in health: the need to move forward. Madrid: World Health Organization, 2001. http://www.euro.who.int/__data/assets/pdf_file/0008/76508/A75328.pdf
6. Australia Institute of Health & Welfare (AIHW). The health of Australia's males: 25 years and over. Canberra: Australia Institute of Health & Welfare, 2013. <http://www.health.gov.au/internet/main/publishing.nsf/Content/male-policy>
7. Barford A, Dorling D, Davey Smith G, *et al.* Life expectancy: women now on top everywhere. *BMJ* 2006;332:808.
8. Bilsker D, Goldenberg L, Davison J. A roadmap to men's health: current status, research, policy and practice. Vancouver: Men's Health Initiative of British Columbia, 2010.
9. European Commission. The State of Men's Health in Europe: extended report. Luxembourg: European Commission, 2011. http://ec.europa.eu/health/population_groups/docs/men_health_extended_en.pdf

10. Ng CJ, Teo CH, Ho CC, *et al*. The status of men's health in Asia. *Prev Med* 2014;67C:295–302.
11. World Health Organization (WHO). Life expectancy: life expectancy by WHO region. World Health Organization, 2011. <http://apps.who.int/gho/data/view.main.690?lang=en>
12. Centers for Disease Control and Prevention (CDC). High blood pressure in the United States. 2015. <http://www.cdc.gov/bloodpressure/facts.htm>
13. McCormack T, Arden C, Begg A, *et al*. Optimising hypertension treatment: NICE/BHS guideline implementation and audit for best practice. *Br J Cardiol* 2013;20(Suppl 1):S1–S16.
14. Centers for Disease Control and Prevention (CDC). National Diabetes Fact Sheet. 2011. http://www.cdc.gov/diabetes/pubs/pdf/ndfs_2011.pdf
15. Centers for Disease Control and Prevention (CDC). National Diabetes Statistics Report. 2014. <http://www.cdc.gov/diabetes/pubs/statsreport14/national-diabetes-report-web.pdf>
16. Feisul MI, Azmi S. National Diabetes Registry Report, Volume 1, 2009–2012. Kuala Lumpur: Ministry of Health, Malaysia, 2013.
17. Diabetes UK. Diabetes in the UK 2012: Key statistics on diabetes. 2012. <https://www.diabetes.org.uk/Documents/Reports/Diabetes-in-the-UK-2012.pdf>
18. Centers for Disease Control and Prevention (CDC). Hypertension among adults in the United States: National Health and Nutrition Examination Survey, 2011–2012. 2013. <http://www.cdc.gov/nchs/data/databriefs/db133.htm>
19. Centers for Disease Control and Prevention (CDC). Percentage of adults with diabetes using any diabetes medication, by age, United States, 1997–2011. 2013. <http://www.cdc.gov/diabetes/statistics/meduse/fig4.htm>
20. Centers for Disease Control and Prevention (CDC). Hypertension among adults in the United States, 2009–2010. 2012. <http://www.cdc.gov/nchs/data/databriefs/db107.htm>
21. Ogden CL, Carroll MD, Kit BK, *et al*. Prevalence of childhood and adult obesity in the United States, 2011–2012. *J Amer Med Assoc* 2014;311:806–14.
22. Mozaffarian D, Benjamin EJ, Go AS, *et al*. Heart disease and stroke statistics—2015 update: a report from the American Heart Association. *Circulation* 2015;131:e29–322.
23. USA Preventive Services Task Force (USPSTF). USPSTF A and B recommendations. 2016. <http://www.uspreventiveservicestaskforce.org/Page/Name/uspstf-a-and-b-recommendations/>
24. Morgan DJ, Brownlee S, Leppin AL, *et al*. Setting a research agenda for medical overuse. *BMJ* 2015;351:h4534.
25. National Institutes of Health (NIH). Precision Medicine Initiative Cohort Program. 2015. <http://www.nih.gov/precision-medicine-initiative-cohort-program>
26. Busfield J. Assessing the overuse of medicines. *Soc Sci Med* 2015;131:199–206.
27. Dryden R, Williams B, McCowan C, *et al*. What do we know about who does and does not attend general health checks? Findings from a narrative scoping review. *BMC Public Health* 2012;12:723.
28. Culica D, Rohrer J, Ward M, *et al*. Medical checkups: who does not get them? *Am J Public Health* 2002;92:88–91.
29. Mao L, de Wit JB, Kippax SC, *et al*. Younger age, recent HIV diagnosis, no welfare support and no annual sexually transmissible infection screening are associated with nonuse of antiretroviral therapy among HIV-positive gay men in Australia. *HIV Med* 2015;16:32–7.
30. Hoebel J, Starker A, Jordan S, *et al*. Determinants of health check attendance in adults: findings from the cross-sectional German Health Update (GEDA) study. *BMC Public Health* 2014;14:913.
31. Institute for Public Health. National Health and Morbidity Survey 2015. Vol. II: Non-communicable diseases, risk factors and other health problems. Kuala Lumpur: Ministry of Health Malaysia, 2015.
32. Bureau of Labor Statistics. American Time Use Survey 2013. US Department of Labor, 2014. <http://www.bls.gov/tus/#data>
33. Logan RF, Patnick J, Nickerson C, *et al*. Outcomes of the Bowel Cancer Screening Programme (BCSP) in England after the first 1 million tests. *Gut* 2012;61:1439–46.
34. Australia Institute of Health & Welfare (AIHW). National Bowel Cancer Screening Program: annual monitoring report 2009. Canberra: Australia Institute of Health & Welfare, 2010.
35. Borkhoff CM, Saskin R, Rabeneck L, *et al*. Disparities in receipt of screening tests for cancer, diabetes and high cholesterol in Ontario, Canada: a population-based study using area-based methods. *Can J Public Health* 2013;104:e284–90.
36. Harvey IS, Alston RJ. Understanding preventive behaviors among mid-Western African-American men: a pilot qualitative study of prostate screening. *J Mens Health* 2011;8:140–51.
37. Hunter JB, Fernandez ML, Lacy-Martinez CR, *et al*. Male preventive health behaviors: perceptions from men, women, and clinical staff along the US-Mexico border. *Am J Mens Health* 2007;1:242–9.
38. Teo CH, Ng CJ, Booth A, *et al*. Barriers and facilitators to health screening in men: a systematic review. *Soc Sci Med* 2016;165:168–76.
39. Ritvo P, Myers RE, Paszat L, *et al*. Gender differences in attitudes impeding colorectal cancer screening. *BMC Public Health* 2013;13:500.
40. Thorne S, Kirkham SR, MacDonald-Emes J. Interpretive description: a noncategorical qualitative alternative for developing nursing knowledge. *Res Nurs Health* 1997;20:169–77.
41. Matua GA, Van Der Wal DM. Differentiating between descriptive and interpretive phenomenological research approaches. *Nurse Res* 2015;22:22–7.
42. Carter N, Bryant-Lukosius D, DiCenso A, *et al*. The use of triangulation in qualitative research. *Oncol Nurs Forum* 2014;41:545–7.
43. Adami MF, Kiger A. The use of triangulation for completeness purposes. *Nurse Res* 2005;12:19–29.
44. Lambert SD, Loiselle CG. Combining individual interviews and focus groups to enhance data richness. *J Adv Nurs* 2008;62:228–37.
45. Fishbein M. The role of theory in HIV prevention. *AIDS Care* 2000;12:273–8.
46. Christy SM, Mosher CE, Rawl SM. Integrating men's health and masculinity theories to explain colorectal cancer screening behavior. *Am J Mens Health* 2014;8:54–65.
47. Champion VL, Scott CR, Kalichman SC, *et al*. The health belief model. In: Glanz K, Barbara K, Viswanath K, eds. *Health behaviour and health education: theory, research and practice*. 4th edn. San Francisco: Jossey-Bass, 2008:45–5250.
48. Thompson L, Reeder T, Abel G. I can't get my husband to go and have a colonoscopy: gender and screening for colorectal cancer. *Health (London)* 2012;16:235–49.
49. Ilic D, Risbridger GP, Green S. The informed man: attitudes and information needs on prostate cancer screening. *J Mens Health Gend* 2005;2:414–20.
50. Blocker DE, Romocki LS, Thomas KB, *et al*. Knowledge, beliefs and barriers associated with prostate cancer prevention and screening behaviors among African-American men. *J Natl Med Assoc* 2006;98:1286–95.
51. Gesink D, Mihic A, Antal J, *et al*. Who are the under- and never-screened for cancer in Ontario: a qualitative investigation. *BMC Public Health* 2014;14:495.
52. Malaysian Communications and Multimedia Commission. Internet User Survey. 2014. <http://www.skmm.gov.my/skmmgovmy/media/General/pdf/Internet-Users-Survey-2014.pdf>
53. US Census Bureau. Reported activity of people using the internet. 2010. <http://www.census.gov/hhes/computer/publications/2010.html>
54. Bailey JV, Murray E, Rait G, *et al*. Interactive computer-based interventions for sexual health promotion. *Cochrane Database Syst Rev* 2010;(9):Cd006483.
55. Wantland DJ, Portillo CJ, Holzemer WL, *et al*. The effectiveness of web-based vs. non-web-based interventions: a meta-analysis of behavioral change outcomes. *J Med Internet Res* 2004;6:e40.
56. Young SD, Cumberland WG, Nianogo R, *et al*. The HOPE social media intervention for global HIV prevention: a cluster randomized controlled trial in Peru. *Lancet HIV* 2015;2:e27–32.
57. Reeder AL. "It's a small price to pay for life": faecal occult blood test (FOBT) screening for colorectal cancer, perceived barriers and facilitators. *N Z Med J* 2011;124:11–17.
58. Tong SF, Low WY, Ismail SB, *et al*. Physician's intention to initiate health check-up discussions with men: a qualitative study. *Fam Pract* 2011;28:307–16.
59. Zeliadt SB, Heffner JL, Sayre G, *et al*. Attitudes and perceptions about smoking cessation in the context of lung cancer screening. *J Am Med Assoc Intern Med* 2015;175:1530–7.
60. Addis ME, Mahalik JR. Men, masculinity, and the contexts of help seeking. *Am Psychol* 2003;58:5–14.
61. Robertson JM, Fitzgerald LF. Overcoming the masculine mystique: preferences for alternative forms of assistance among men who avoid counseling. *J Couns Psychol* 1992;39:240–6.
62. Wisch AF, Mahalik JR, Hayes JA, *et al*. The impact of gender role conflict and counseling technique on psychological help seeking in men. *Sex Roles* 1995;33:77–89.
63. Seidler ZE, Dawes AJ, Rice SM, *et al*. The role of masculinity in men's help-seeking for depression: a systematic review. *Clin Psychol Rev* 2016;49:106–18.