LKS Faculty of Medicine
The University of Hong Kong
香港大學李嘉誠醫學院

HKUMed finds "chat-based instant messaging support" could substantially enhance smokers' quitting rate

Press Conference

September 20, 2019

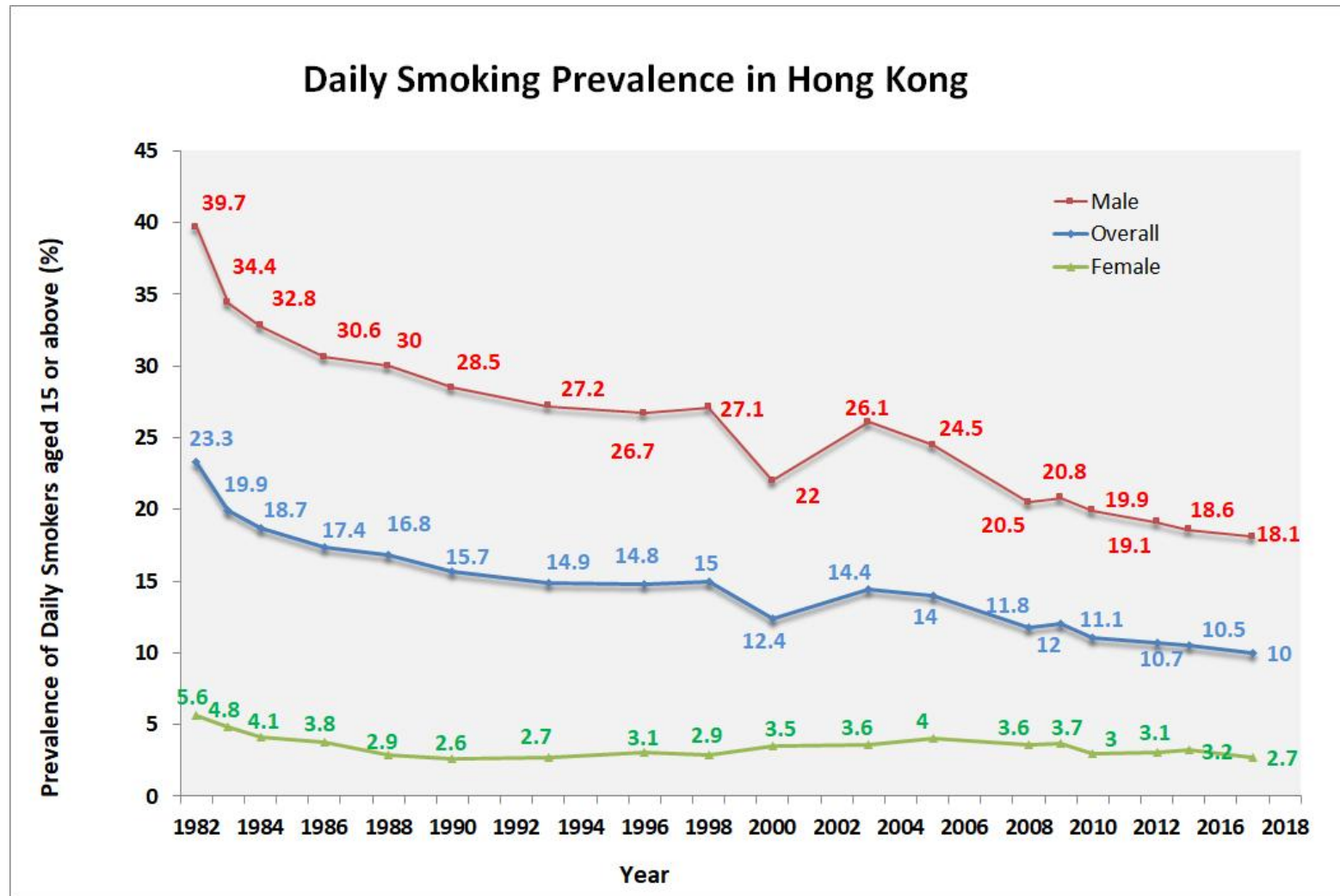# HKUMed finds "chat-based instant messaging support" could substantially enhance smokers' quitting rate

Professor Lam Tai-hing, School of Public Health, HKUMed

Dr Kelvin Wang, School of Nursing, HKUMed

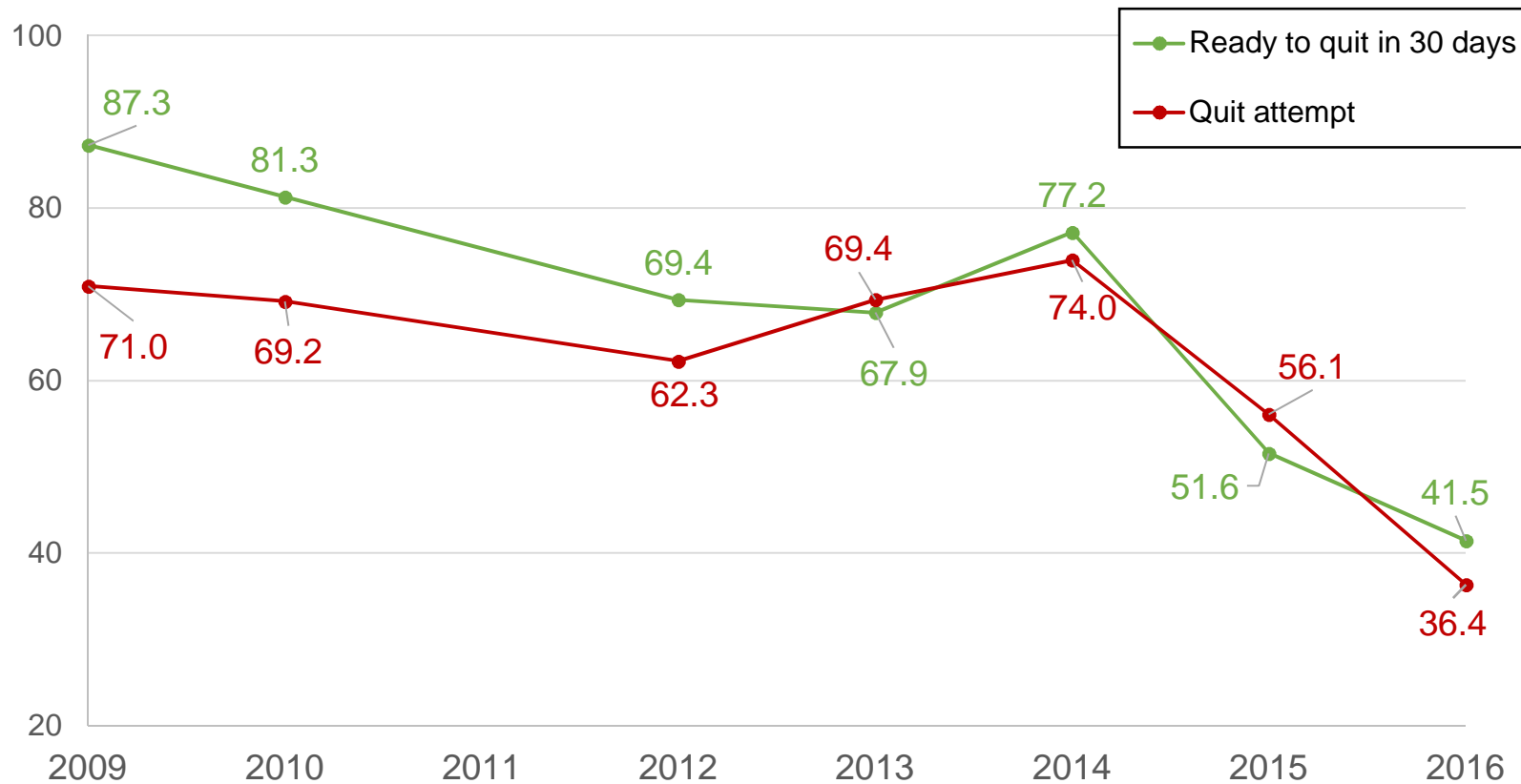Ms Vienna Lai, Hong Kong Council on Smoking and Health

20 Sept 2019

Pattern of smoking in Hong Kong (1)

Daily Smoking Prevalence in Hong Kong

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Pattern of smoking in Hong Kong (2)

Motivation to quit in 30 days & previous quit attempt, %

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Pattern of smoking in Hong Kong (3)

Thematic Household Survey No. 64: Pattern of Smoking

- Daily cigarette smoking prevalence: 10.0% (N=615,000) in 2017

- However, 63.5% had never tried to quit and did not want to give up smoking

- Only 2.4% currents smokers had ever sought help from a smoking cessation service*

> à Need of new treatment model that can motivate and help unmotivated smokers to quit

Referring to Department of Health's Smoking Cessation Hotline 1833 183 and Clinic; Hospital Authority's Smoking Counselling and Cessation Centre; Tung Wah Group of Hospitals Integrated Centre on Smoking Cessation; Pok Oi Hospital's Smoking Cessation Service; The University of Hong Kong's Youth Quitline

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Why instant messaging apps? (1)

- Thematic Household Survey No. 64: Personal computer and Internet penetration
  - ∅ Smartphone ownership in Hong Kong: 88.6% in 2017

- Instant messaging apps are the most widely used communication tool

- Allow delivery of health information in texts, emojis, stickers, voice message and multi-media files (pictures, video, etc.) freely through internet

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Why instant messaging apps? (2)

Jockey Club FAMILY Project
Family and Health Information
Trend Survey

- Respondents: 3,063 adults

- Health information exposure
  through instant messaging is
  associated with healthier
  behaviour

  - Ø More physical activities
  - Ø Less smoking

*Shen et al. Prev Med
2018;133:140-146*

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Why instant messaging apps? (3)

Focus group interviews with 21 current smokers in Hong Kong:

- Instant messaging apps is an acceptable and feasible platform for counsellors to chat with smokers and provide personalized advice to quit in real time

- Provide psychosocial support

- Help identify or clarify reasons for quitting to strengthen motivation to quit

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Abstract

Background: Advances in mobile communication technologies provide a promising avenue for the delivery of tobacco dependence treatment. Although mobile instant messaging (IM) apps (eg, WhatsApp, Facebook messenger, and WeChat) are an inexpensive and widely used communication tool, evidence on its use for promoting health behavior, including smoking cessation, is scarce.

Objective: This study aims to explore the perception of using mobile IM as a modality to deliver a proposed chat intervention for smoking cessation in community smokers in Hong Kong, where the proportion of smartphone use is among the highest in the world.

Methods: We conducted 5 focus group, semistructured qualitative interviews on a purposive sample of 15 male and 6 female current cigarette smokers (age 23-68 years) recruited from the community in Hong Kong. All interviews were audiotaped and transcribed. Two investigators independently analyzed the transcripts using thematic analyses.

Results: Participants considered mobile IM as a feasible and acceptable platform for the delivery of a supportive smoking cessation intervention. The ability to provide more personalized and adaptive behavioral support was regarded as the most valued utility of the IM−based intervention. Other perceived utilities included improved perceived psychosocial support and identification of motivator to quit. In addition, participants provided suggestions on the content and design of the intervention, which may improve the acceptability and usability of the IM−based intervention. These include avoiding health warning information, positive messaging, using former smokers as counselors, and adjusting the language style (spoken vs written) according to the recipients' preference.

Conclusions: This qualitative study provides the first evidence that mobile IM may be an alternative mobile health platform for the delivery of a smoking cessation intervention. Furthermore, the findings inform the development of a chat-based, IM smoking cessation program being evaluated in a community trial.

(JMIR Mhealth Uhealth 2019;7(1):e11954)   doi:10.2196/11954

KEYWORDS

chat intervention; instant messaging; mHealth; mobile phone; social media; smoking cessation; tobacco dependence; WhatsApp

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The aim and methods of the study

- Study aim: To examine the effectiveness of a chat-based WhatsApp intervention for smoking cessation ("WhatsApp chat support")

- Study design: Pragmatic cluster-randomised controlled trial
    - ∅ Pragmatic trial is the most preferred method to examine the effectiveness of an intervention in real-world settings

- The study was conducted within the 8th "Quit to Win" Smoke-free Community Campaign organized by Hong Kong Council on Smoking and Health
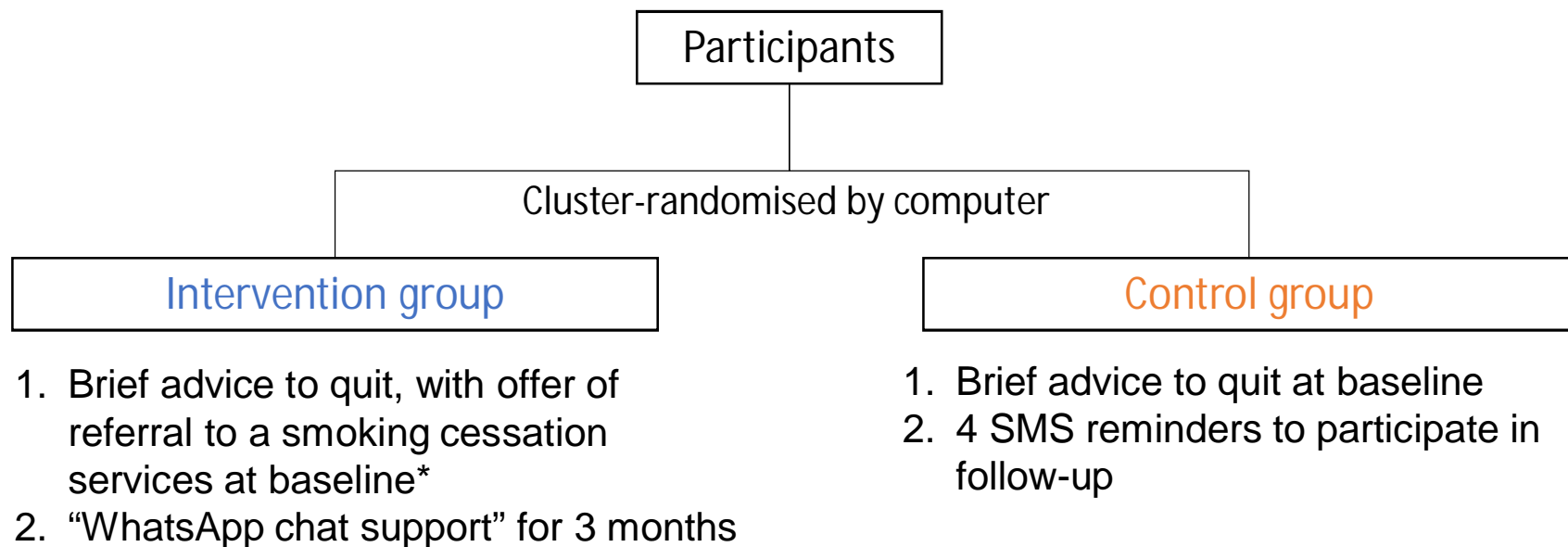
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How did we recruit smokers?

- Between June and Sept 2019, 68 recruitment booths were setup in all 18 districts in Hong Kong

- Trained ambassadors (mainly university students) proactively approached and recruited smokers at smoking hotspots in the nearby areas

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How were the participants treated?

- Participants were cluster-randomised by computer into "Intervention group" or "Control group"

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                        ┌─────────────────────┐
                        │     Participants     │
                        └─────────┬───────────┘
                                  │
                   Cluster-randomised by computer
              ┌───────────────────┴───────────────────┐
    ┌─────────────────────┐                 ┌─────────────────────┐
    │  Intervention group │                 │    Control group    │
    └─────────────────────┘                 └─────────────────────┘
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1. Brief advice to quit, with offer of referral to a smoking cessation services at baseline*
2. "WhatsApp chat support" for 3 months

1. Brief advice to quit at baseline
2. 4 SMS reminders to participate in follow-up

- All participants received a self-help booklet by Hong Kong Council on Smoking and Health

HKU Med   *Include a health warning leaflet and a referral card
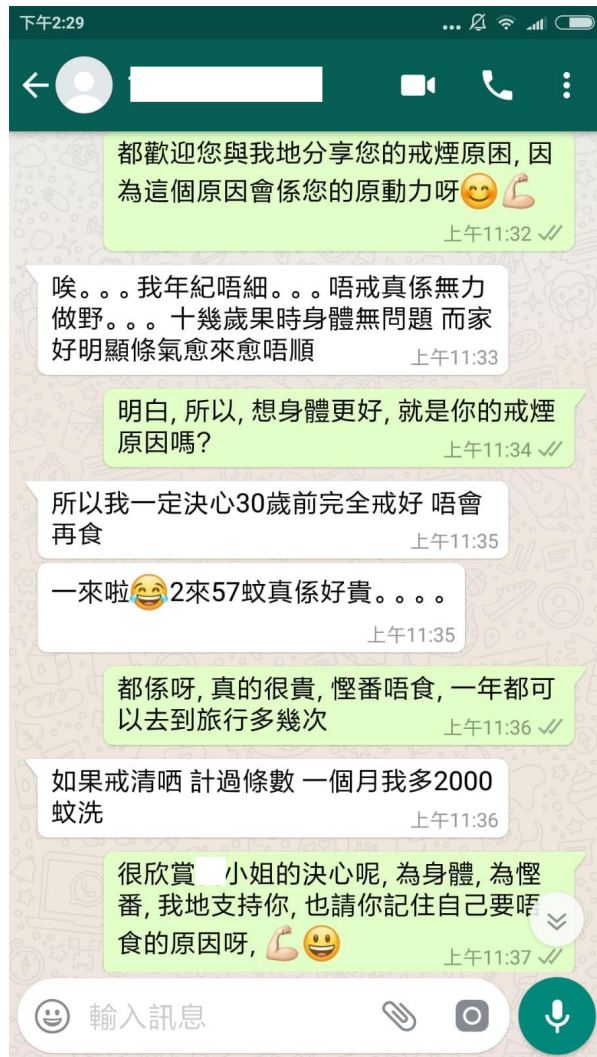
"WhatsApp chat support" for 3 months

Counsellors chatted with the participants through WhatsApp

- Learnt about their smoking behaviour

- Provided personalised, theory-based advice to quit in real time

- Promoted the use of and offered referral to existing smoking
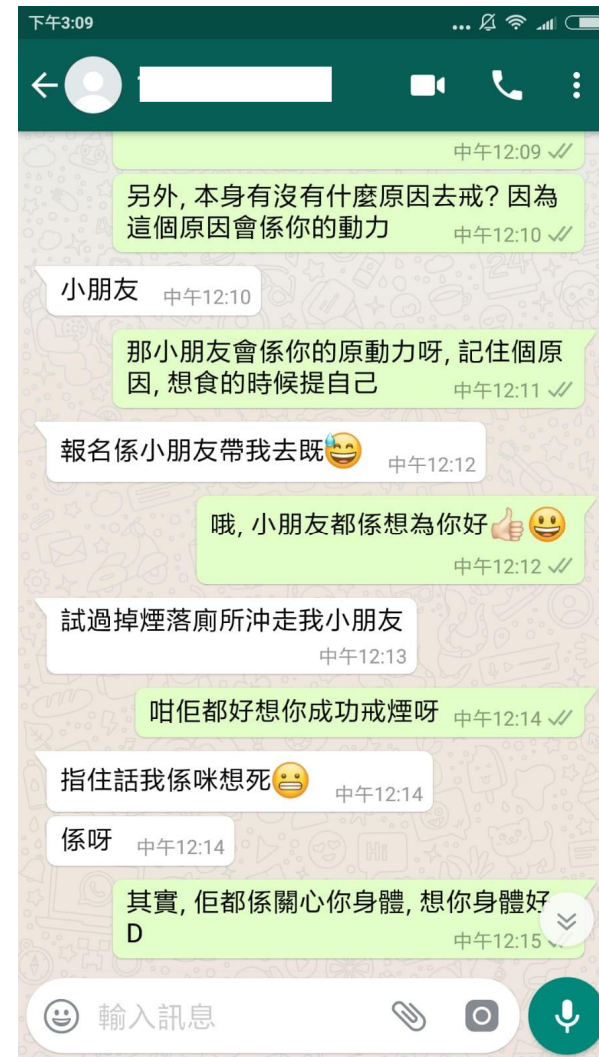 cessation services
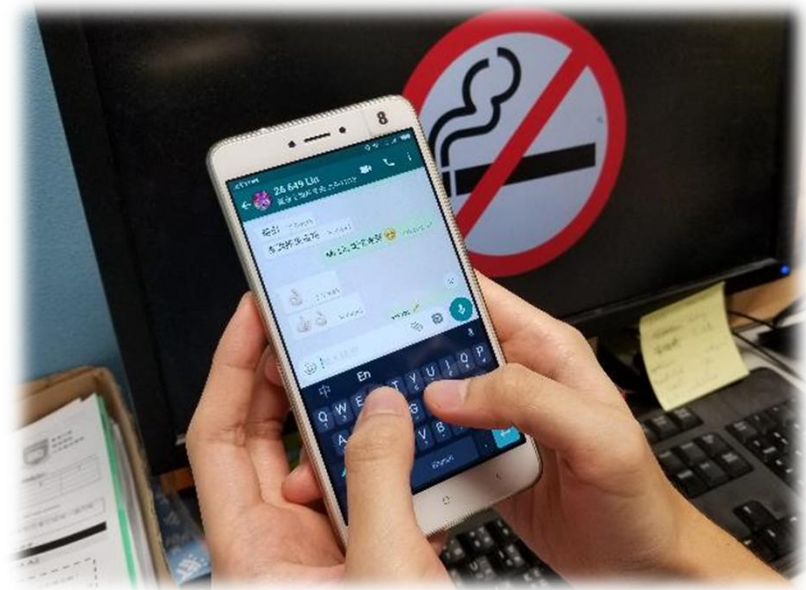
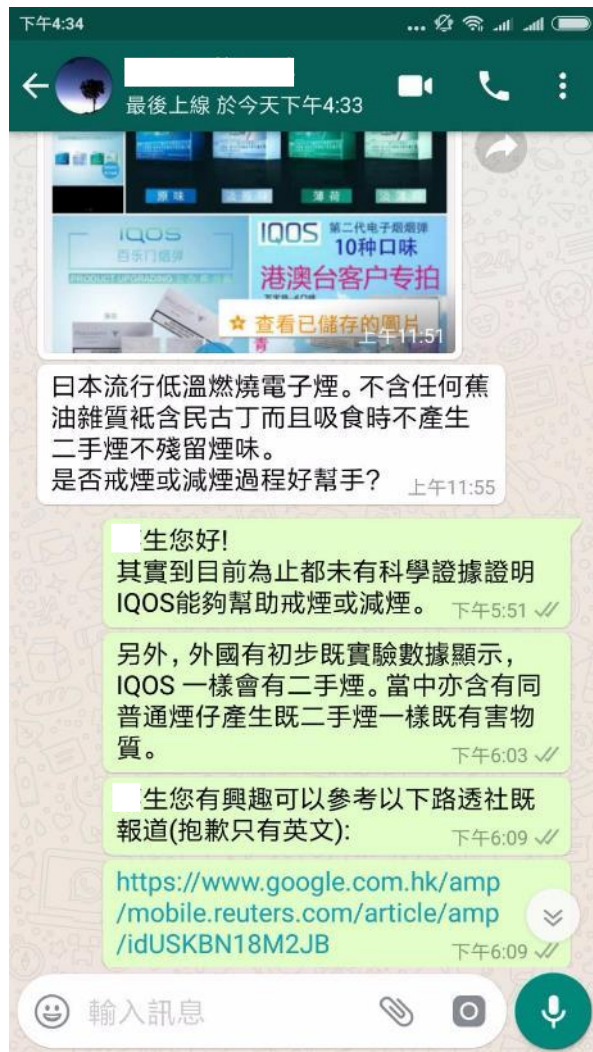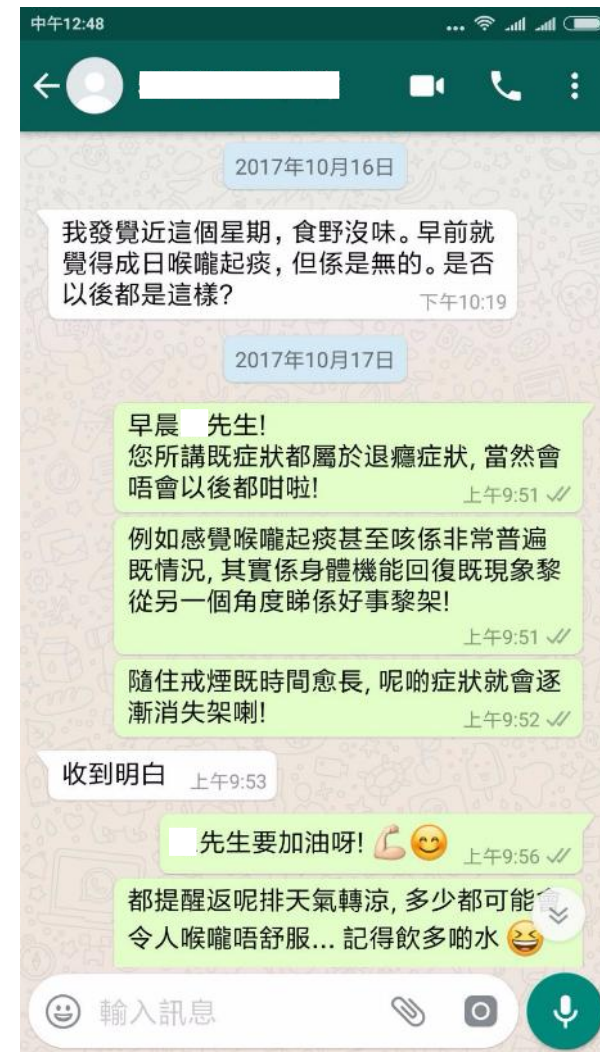# Examples of "WhatsApp chat support"(1)
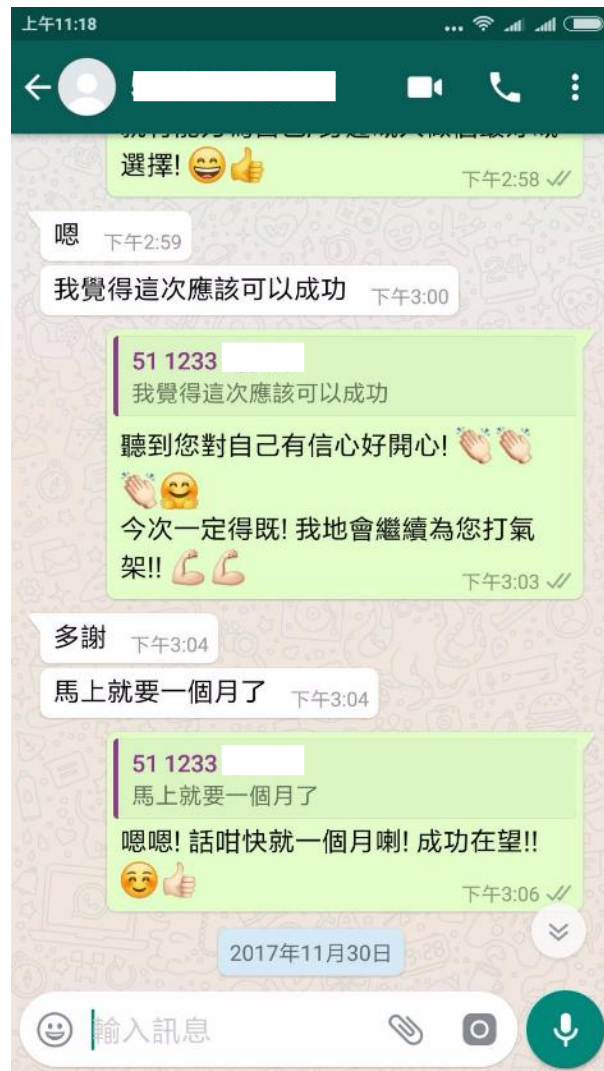
1.

2.

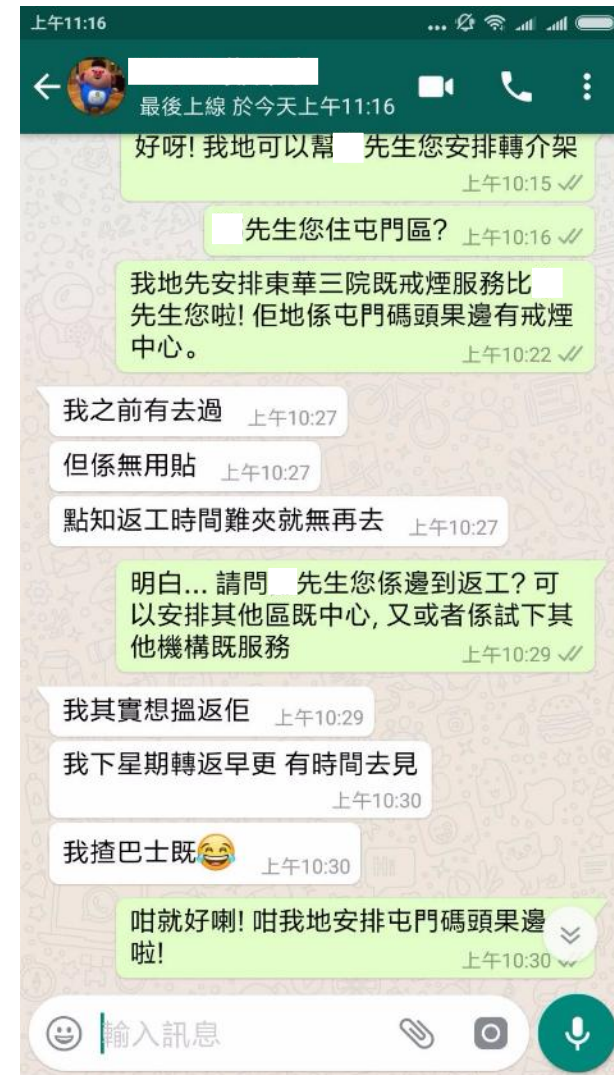# Examples of "WhatsApp chat support"(2)

3.

4.

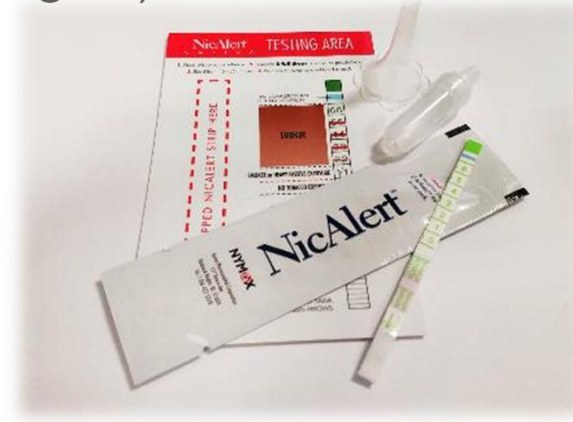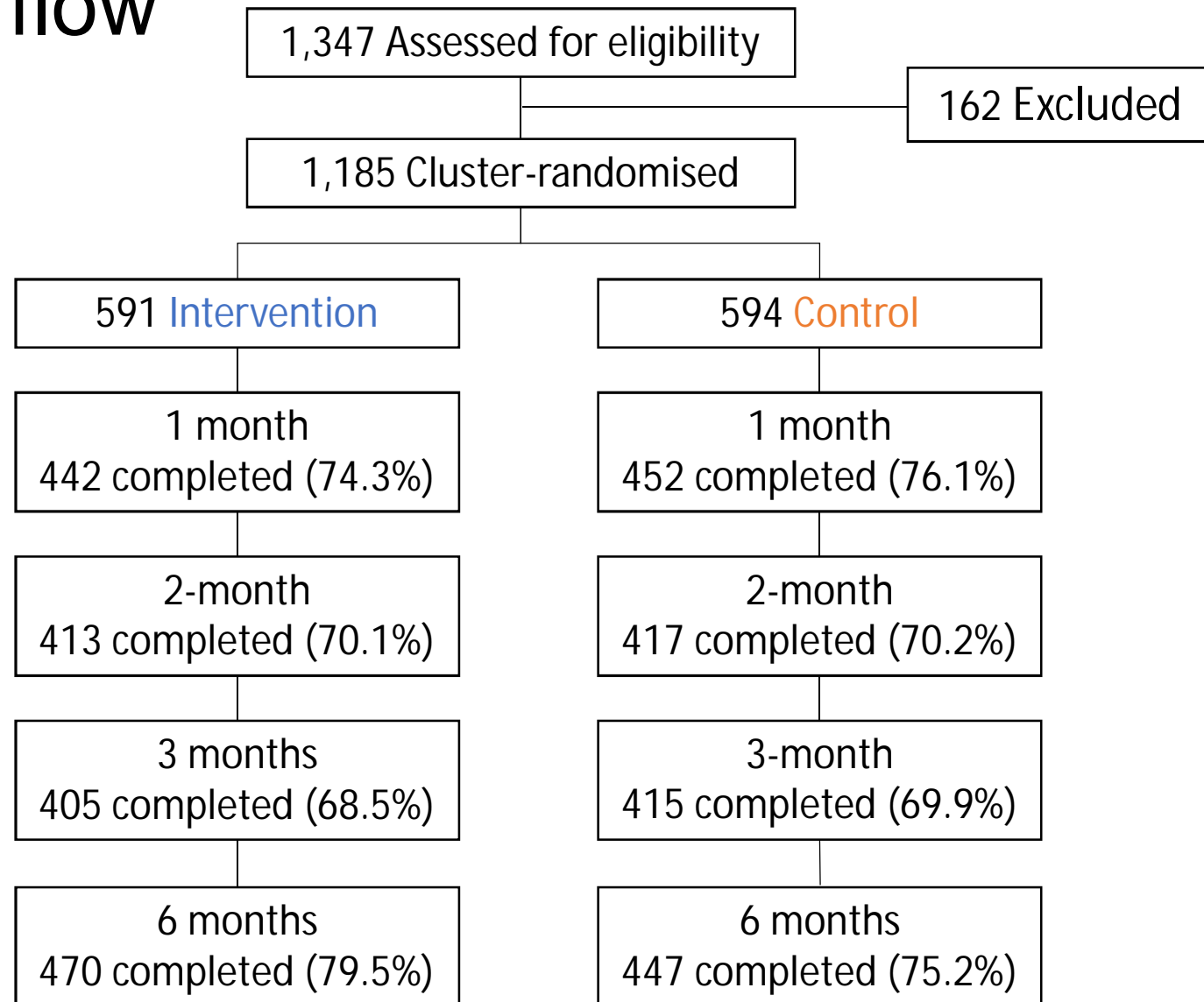# Examples of "WhatsApp chat support"(3)

5.

6.

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How did we assess quitting outcomes?

- Follow-up with participants by telephone at 1, 2, 3, 6 months, respectively
  - ∅ "In the past 7 days, did you smoke any cigarette (even a single puff)?"

- Participants who self-reported having quitted for 7 days or longer were invited to verify their quit status by
  - ∅ Exhaled carbon monoxide test (level of <4 ppm)
  - ∅ Salivary cotinine test (level of <10 ng/ml)

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Study flow

1,347 Assessed for eligibility

162 Excluded

1,185 Cluster-randomised

591 Intervention

594 Control

591 Intervention	594 Control
1 month 442 completed (74.3%)	1 month 452 completed (76.1%)
2-month 413 completed (70.1%)	2-month 417 completed (70.2%)
3 months 405 completed (68.5%)	3-month 415 completed (69.9%)
6 months 470 completed (79.5%)	6 months 447 completed (75.2%)

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Overall retention rate at 6-month follow-up: 77.4%

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Characteristics of the participants (N=1185)

		Mean or %
Mean age, year		41.5
Sex	Male	77.5%
	Female	22.5%
Nicotine dependence*†	Light	51.7%
	Moderate	42.1%
	Heavy	6.2%
Ready to quit in 30 days†	No	67.2%
	Yes	32.8%
Previous quit attempt†	Never	51.8%
	Over 1 year ago	38.1%
	Within 1 year	10.7%

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*Measured by heaviness of smoking index
† Participants with missing data were excluded

Results (1): Self-reported quitting

- The "intervention group" had higher chances of self-reported quitting than the "control group" at all follow-up timepoints

Chances of self-reported quitting, %

18.8***
15.2**
14.4*
11.4***
10.7
10.1**
9.1*
7.7

Intervention group (N=591)
Control group (N=594)

Baseline   1 month   2 months   3 months   6 months

*P<0.05; **P<0.01; ***P<0.001

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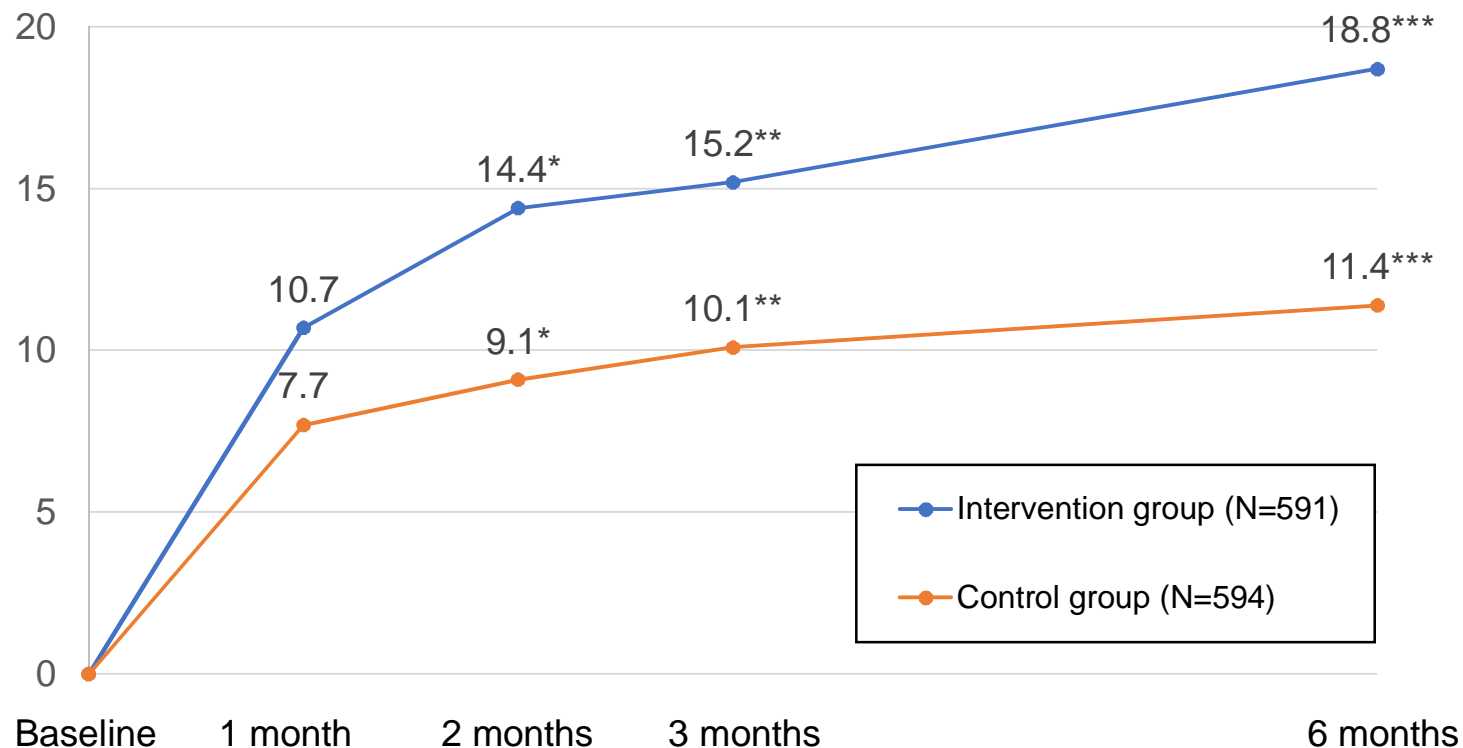
Results (2): Verified quitting

- The chance of verified quitting was 90% and 60% higher in the "intervention group" than in the "control group" at 3 and 6 months, respectively

Chance of verified quitting, %

*P<0.05; **P<0.01; ***P<0.001
† 3 months after the end of "WhatsApp chat support"
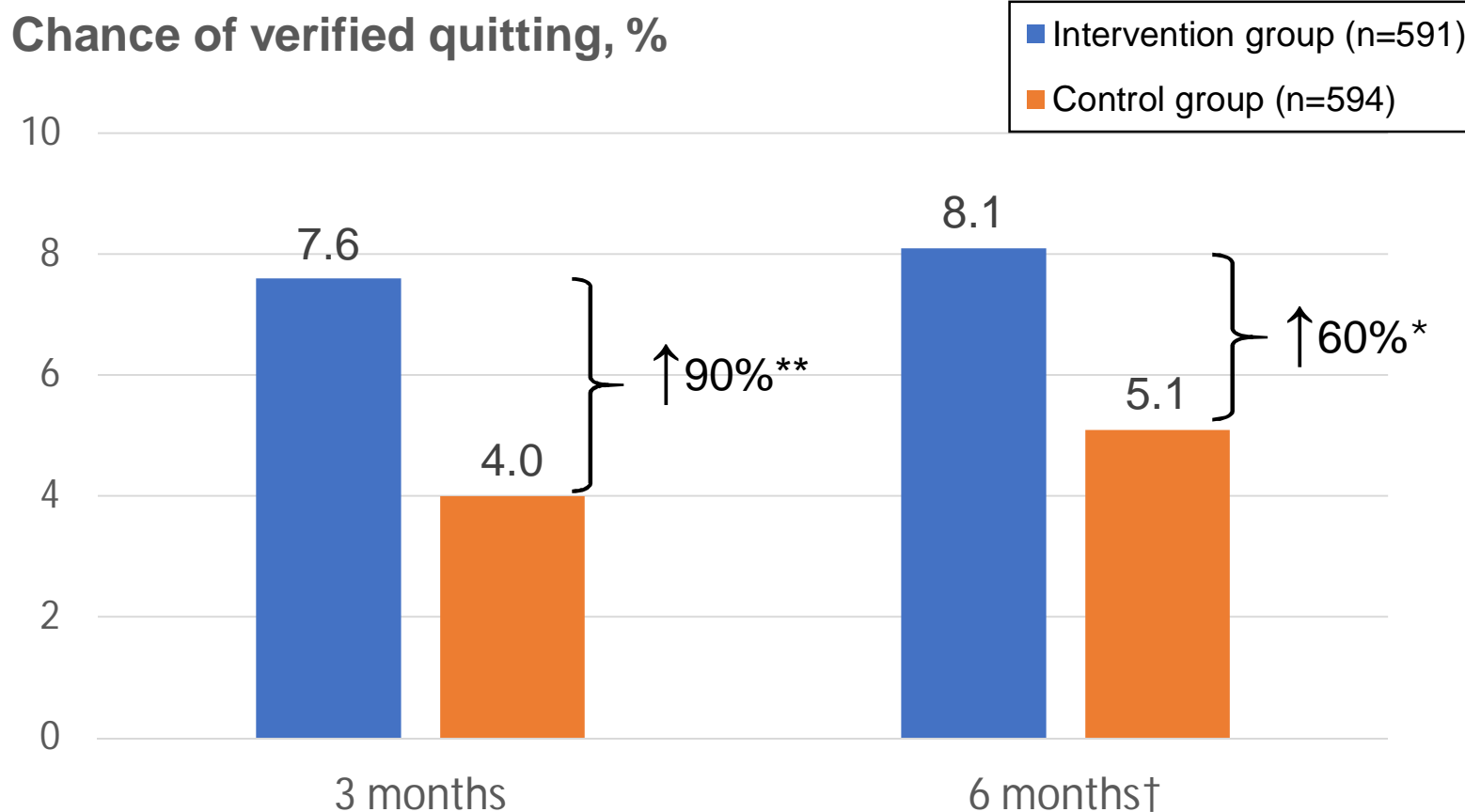
Results (3): Subgroup analyses

- The intervention effect on chance of verified quitting was stronger in participants not ready to quit within 30 days at baseline than those ready to quit*

Chances of verified quitting, %

*P value for interaction <0.0001
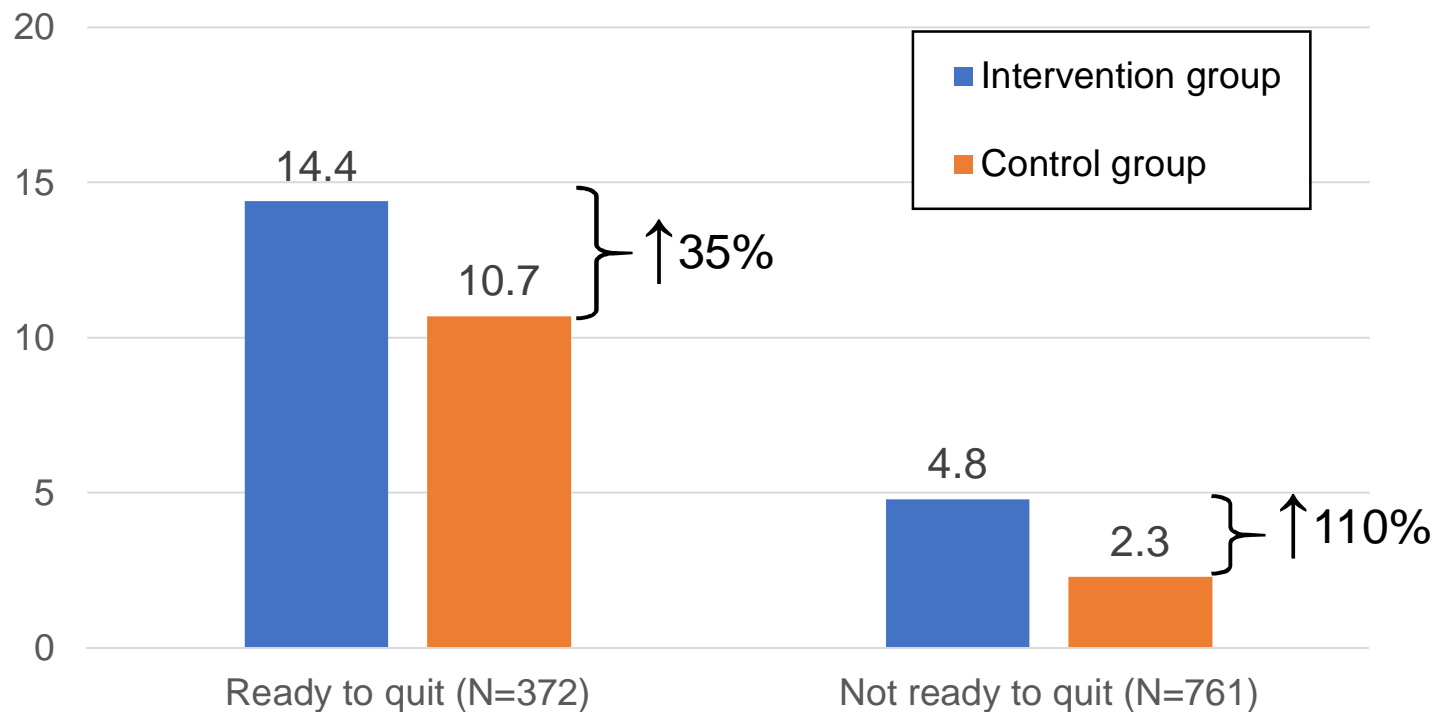
Results (4): Intervention engagement analyses in the intervention group

- Effective engagement in "WhatsApp chat support"* was associated with increased chances of verified quitting, with or without the use of smoking cessation services[†]

Chances of verified quitting, %

* Defined by having chatted with a counsellor via WhatsApp
† All P<0.001
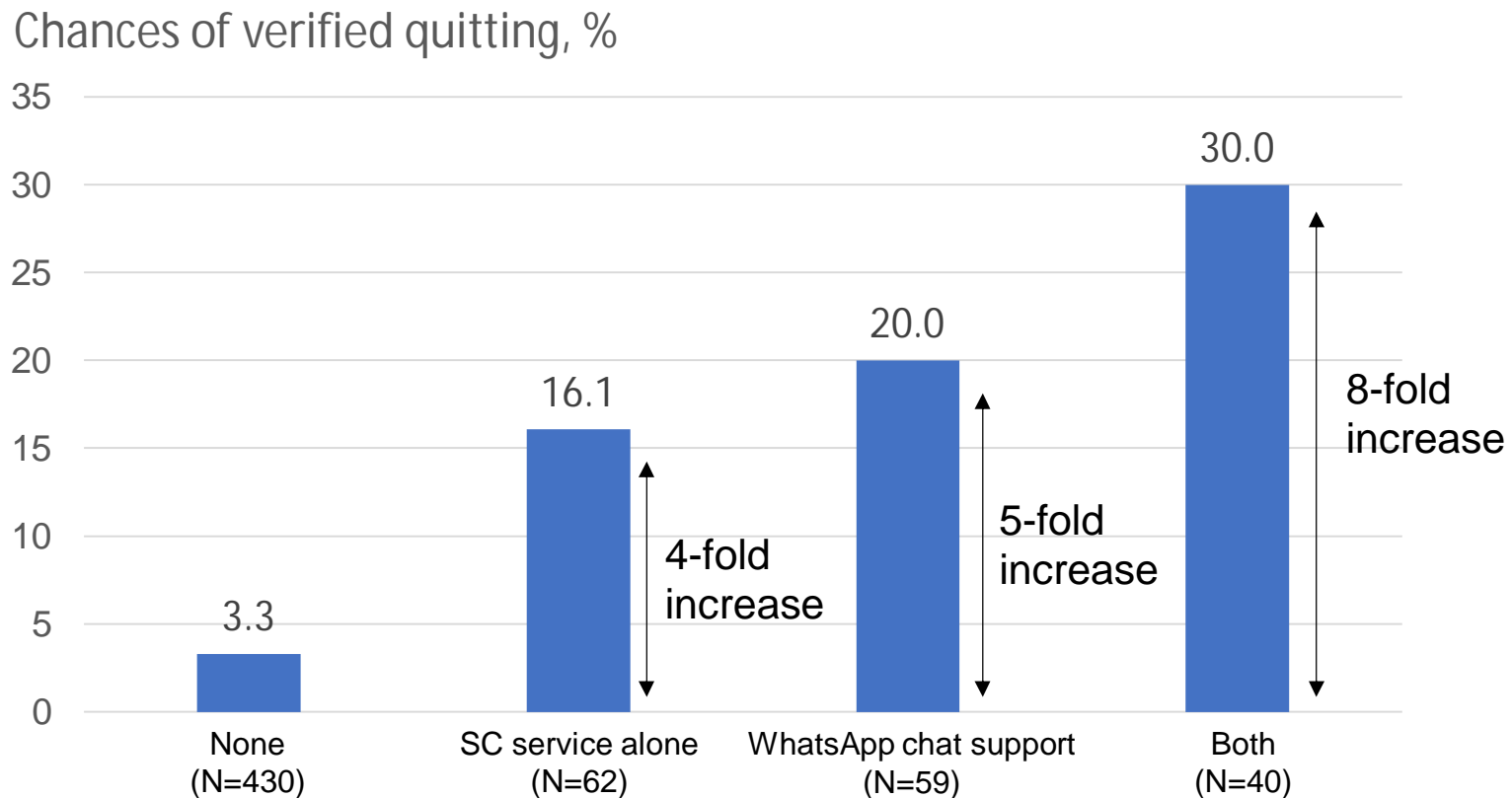
Conclusions

- This study provides initial evidence that "WhatsApp chat support" can…

   Ø Help smoker quit as a stand-alone intervention, and…

   Ø Be combined with treatment provided by existing smoking cessation services to further increase the chances of quitting

- Local providers of smoking cessation service can consider adopting "WhatsApp chat support" as a new treatment option

   Ø To strengthen the effectiveness of existing treatments (e.g., increase compliance of nicotine replacement therapy)

   Ø Set up a WhatsApp quitting service with a fixed number (like 1833 183)

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Implications

The research team is conducting further research for

- Ascertaining the effectiveness of "WhatsApp chat support" in different settings and populations (e.g., hospitalized patients)

- Optimising the content of "WhatsApp chat support"

- Adopting the model for treatment for other lifestyles (e.g., alcoholism)

- Developing and examining chatbot for automizing chat-based support to reduce the burden of smoking cessation counsellors

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The study results are published in:

THE LANCET
Digital Health

Citation:

Wang MP, Luk TT, Wu Y, Li WHC, Cheung DYT, Kwong ACS, Lai VWT, Chan SSC, Lam TH. Chat-based instant messaging support integrated with brief intervention for smoking cessation: a community-based, pragmatic, cluster-randomized controlled trial. Lancet Digital Health 2019;1(4):e183-e192

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THANK YOU

Acknowledgement

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About "Quit to Win" Smoke-free Community Campaign(1)

- Organized yearly since 2009* by Hong Kong Council on Smoking and Health in collaboration with School of Nursing and School of Public Health, HKUMed

- Motivate smoking cessation through contest and prizes

- Disseminates smoke-free message through district-based promotional activities in collaboration with NGOs creating a positive social atmosphere to support smoking cessation

- Provides smoking cessation counselling training

* Except 2011

About "Quit to Win" Smoke-free Community Campaign (2)

No. of Smoke-free Ambassador trained	578
No. of participants of the "Quit to Win" contests	11,171
No. of recruitment sessions	618
No. of smoke-free promotion activities organized by district working partners(NGOs)	457

Source of data: "Quit to Win" Contest, Hong Kong Council on Smoking and Health, 2009-10, 2012-16

About "Quit to Win" Smoke-free Community Campaign (3)

- The "Quit to Win" Contest engaged over 1000 smokers recruited from the community in quitting every year

- Conduct scientific research for designing and examining brief interventions for smoking cessation
    - ∅ Provide recommendations to improve smoking cessation services in Hong Kong

- The research methods and findings have been published in 12 international medical journals

10th "Quit to Win" Smoke-free Community Campaign

- Recruitment period from 15 June to 30 September 2019.

- Supported by 18 District Councils, 22 district working partners and 37 supporting organizations from various industries.

- Recruitment schedule:

Date	Time	Venue
24 Sep	12:00 – 18:30	HKJC Betting Branch - Choi Wan
28 Sep	12:00 – 18:30	HKJC Betting Branch - Kwai Chung, Wing Fong Road
29 Sep	11:30 – 16:30	Wah Fu Estate, Aberdeen
	14:00 – 18:00	Ping Shek Estate, Ngau Tau Kok

- Website: www.quittowin.hk