

Multicomponent intervention to promote expression of organ donation wish to family members: a randomised controlled trial (abridged secondary publication)

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KEY MESSAGES

1. An intervention integrating online videos and motivational interviewing through telephone significantly increased expression of organ donation wish to family members, compared with only receiving a text message related to organ donation.
2. However, the increase in expression of organ donation wish to family members did not increase the rate of new organ donation registration.
3. Participants were satisfied with the motivational interviewing session and considered the narrative stories and information in the videos the most useful.
4. Most participants discussed the organ donation

issue with family members during family gatherings.

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Introduction

Hong Kong has one of the lowest rates of deceased organ donation (OD) in the world.¹ In a Hong Kong survey in 2019, only 31.7% of the general population were willing to donate organs.² In Hong Kong, consent of the next-of-kin (eg spouse/child/parent/sibling) is required for OD of deceased persons regardless of the deceased person's decision. However, 76.6% of the general population were unaware of their family members' wish on posthumous OD.² Therefore, communication with family members about OD is as important as registration. We developed a multicomponent intervention (by integrating e-health strategies and motivational interviewing³) and evaluated its efficacy in facilitating expression of OD wish to family members. In addition, we explored potential mediation effects of self-efficacy and perceived barriers/facilitators in expression of OD wish to family members.

Methods

Between December 2019 and January 2021, 500 Hong Kong Cantonese-speaking residents aged 18 to 70 years who had intentions to donate organs after death but did not express OD wish to family members were recruited using respondent-driven sampling via random telephone numbers (n=131) or online platforms (n=369).

Participants were randomly allocated to the intervention (n=254) or control (n=246) group by six block randomisations. Participants in the intervention group watched two short online videos (sent via social media) containing OD-related information, testimonials from an organ recipient and their family member, and narrative stories related to people's concerns about OD. Then, they underwent a 15-minute motivational interviewing session through telephone by a trained research staff to discuss the barriers/facilitators of expressing OD wish to family members and to resolve the ambivalence over expression of OD intent. The intervention materials were designed based on theoretical concepts in the Health Belief Model and the Social Cognitive Theory. Participants were provided with pictorial e-messages pre-designed by the research team to initiate OD-related conversations through social media. Participants in the control group received a text/Whatsapp message highlighting the importance of OD and expression of OD wish to family members in Hong Kong.

The primary outcome was the participants' self-reported expression of OD wish to family members. Secondary outcome was the prevalence of new OD registration. Perceived usefulness and satisfaction of the intervention components were evaluated among participants in the intervention group. All participants were followed up at 2 months through

TABLE 1. Expression of organ donation wish to family members and new organ donation registration between the intervention and control groups

| | Intervention group (n=254) | Control group (n=246) | Relative risk (95% CI) | Absolute risk reduction (95% CI) | No. needed to treat | Adjusted odds ratio (95% CI) | P value |
|---|----------------------------|-----------------------|------------------------|----------------------------------|---------------------|------------------------------|---------|
| Expression of organ donation wish to family member at 2-month follow-up | 57.5% | 41.5% | 1.39 (1.56-1.67) | 0.16 (0.07-0.24) | 6.24 | 1.88 (1.31-2.69) | 0.001 |
| New organ donation registration at 2-month follow-up | 10.2% | 8.1% | 1.15 (0.81-1.61) | 0.021 (-0.03 to 0.07) | 47.48 | 1.37 (0.74-2.54) | 0.32 |

telephone surveys. Each participant who completed the survey was given a HK\$50 supermarket coupon. Absolute risk reduction (ARR), relative risk (RR), and their 95% confidence interval (CI) at follow-up were derived. Two-sided tests were used, and P values of <0.05 were considered statistically significant.

Results

Among the participants, 62.6% were aged 18 to 35 years, 66.9% were women, 20.3% had attained a secondary education or below, and 33.8% were currently married/cohabitating with someone. The intervention and control groups were comparable in terms of sociodemographic and psychosocial variables, except that significantly more participants in the intervention group were female and had a religious affiliation. Thus, sex and religion were adjusted for in subsequent analyses.

At baseline, all participants did not express their OD intent. At the 2-month follow-up, more participants in the intervention than control group reported expression of OD wish to family members (57.5% vs 41.5%, RR=1.39, 95% CI=1.56-1.67, ARR=0.16, number needed to treat=6.24, Table 1). However, the two groups did not differ significantly in new OD registration (RR=1.15, 95% CI=0.81,1.61, ARR=0.02, Table 1). Respectively among 144 and 106 participants in the intervention and control group who expressed their OD intent, 60.2% and 59.8% did so in family gatherings, 25.3% and 31.3% in face-to-face private talks, and 5.5% and 1% through our pre-designed pictorial messages; parents were the most reported informed family members (44.5% and 44.1%) [Table 2].

The mediation effects of intervention on expression of OD wish to family members were not significant in terms of perceived barriers (indirect effect= -0.01, standard error=0.03, 95% CI= -0.06-0.04) and self-efficacy (indirect effect= -0.02, standard error=0.30, 95% CI= -0.09-0.02). After adjusting for the mediators, the direct effect of intervention (versus controls) on expression of OD wish to family members remained significant (effect=0.92, standard error=0.23, 95% CI=0.47-1.37, P<0.001).

On a scale of 0 (lowest) to 10 (highest),

TABLE 2. Expression of organ donation wish to family members by participants

| Expression of organ donation wish | Intervention group (n=146) | Control group (n=102) |
|---|----------------------------|-----------------------|
| Family member | | |
| Parent(s) | 65 (44.5) | 45 (44.1) |
| Sibling(s) | 19 (13.0) | 12 (11.8) |
| Spouse | 27 (18.5) | 32 (31.4) |
| Other (eg children) | 35 (24.0) | 13 (12.7) |
| Method | | |
| Pre-designed pictorial messages | 8 (5.5) | 1 (1.0) |
| Face-to-face talk with family members | 37 (25.3) | 37 (31.3) |
| Bringing up the topic during family gathering | 88 (60.2) | 61 (59.8) |
| Watching organ donation information with family | 8 (5.5) | 3 (2.9) |
| Others (eg talking on the phone) | 5 (3.4) | 5 (4.9) |

participants in the intervention group were highly satisfied with the intervention components (range, 6.67-7.43) and considered the information delivered useful (range, 6.49-7.35) [Table 3]. Specifically, they were satisfied with the motivational interviewing session and the narrative stories in the videos and considered them useful for expression of OD wish to family members.

Discussion

The multicomponent intervention significantly increased expression of OD wish to family members, despite no significant increase in new OD registration. Compared with pamphlets and posters, videos provide supplementary technical information (eg perceived misconceptions) and enhance emotional connection through narratives and testimonials of other donors/recipients of OD.⁴

A short single session (15 minutes) of motivational interviewing, even delivered by telephone, can effectively change behaviours such as smoking and drinking.³ Similarly, we applied motivational interviewing to identify and discuss culturally relevant barriers/facilitators with the participants. Motivational interviewing session

TABLE 3. Evaluation of intervention components in a scale of 0 (lowest) to 10 (highest) by participants in the intervention group (n=196)

| | Video 1 | Video 2 | Motivation interviewing session | Predesigned photos/e-messages | Overall |
|---|-----------|-----------|---------------------------------|-------------------------------|--------------------|
| Usefulness of information | 7.22±1.58 | 7.35±1.41 | 7.03±1.53 | 6.49±1.39 | 7.32 (1.51) |
| Usefulness for organ donation intent expression | 6.80±1.74 | 6.64±1.94 | 6.91±1.63 | 6.27±1.56 | 7.18 (1.53) |
| Level of satisfaction | 7.32±1.47 | 7.43±1.41 | 7.42±1.39 | 6.67±1.27 | 7.47 (1.37) |

facilitated expression of OD wish to family members.

Although we provided pre-designed social media messages to participants to express their OD wish to family members, most participants preferred to discuss the posthumous OD issue through face-to-face family talk regardless of group allocation. This suggested that watching videos and motivational interviewing were sufficient to motivate participants to discuss OD issues with family members.

Despite an increase in expression of OD wish to family members, there was no significant change in perceived barriers and self-efficacy, which are determinants of behaviours according to the Health Belief Model. The model may not be the best fit for understanding expression of OD intent and OD registration in the Hong Kong population. Future studies are warranted to determine if other psychosocial factors are associated with the intervention effect on the expression of OD intent. To enhance OD registration, more efforts should be made to proactively provide immediate and complete opportunities to passive-positive donors (ie those who have the intent to donate organ but have not completed donor registration).⁵ One strategy could be provision of a direct link to the OD registration website together with our intervention components.

This study has limitations. The sample consisted of higher proportions of highly educated and younger individuals than the general population

and thus our findings may not be generalisable to the general population. It was novel to apply motivational interviewing to facilitate expression of OD intent in Hong Kong with opt-in legal contexts. Whether our findings are applicable to other cultural and opt-out contexts has yet to be confirmed.

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References

1. International Registry in Organ Donation and Transplantation. 2019. Available from: http://www.irodat.org/?p=database&c=_H#data
2. Census and Statistics Department. Thematic Household Survey Report No. 68. 2019;68:1-145.
3. Rubak S, Sandbaek A, Lauritzen T, Christensen B. Motivational interviewing: a systematic review and meta-analysis. *Br J Gen Pract* 2005;55:305-12.
4. Li A, Lo M, Crawshaw JE, et al. Interventions for increasing solid organ donor registration. *Cochrane Database Syst Rev* 2021;4:CD10829.
5. Siegel JT, Alvaro EM, Crano WD, Gonzalez AV, Tang JC, Jones SP. Passive-positive organ donor registration behavior: a mixed method assessment of the IIFF Model. *Psychol Health Med* 2010;15:198-209.