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Disruptive innovations in health research: Examining FTF to email to TMI to wearable devices

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Objectives: To compare face-to-face, email, text messaging and wearable accessory as feasible and effective methods of delivering prevention and intervention strategies to survivors of women in intimate partner violence (IPV) and to explore mobile and wearable devices to advance health and nursing.

Methods: A sequential transformative mixed methods design including quantitative and qualitative data collection and data analysis was used. The HELP (Health, Education on safety and Legal rights and Privileges) intervention was delivered to three study groups, Face-to-Face (FTF), Email (EML) and Waitlist Controls (WLC) in six modules once every week for 6 weeks. The 32 adult female participants who experienced IPV were 45.2% Asian, 32.3% white and 22.5% black. Outcome measures were PROMIS anger, anxiety and depression scales.

Results: Differences in PROMIS anger, anxiety and depression scales were found between EML and WLC, EML and FTF. The anger, anxiety and depression mean scores pre-test to post-test difference was significant for EML ($p<0.001$); FTF ($p=0.01$) and WLC ($p=0.01$). In a descriptive study on Text Messaging Intervention (TMI) to twenty (n=20) 18-24-year-old women (n=10) and men (n=10), results also showed significant pre to post-test increases in knowledge of major health consequences of IPV ($p<0.001$) and confidence in responding and intervening in IPV situation ($p<0.001$).

Implications: Any delivery method could be useful in delivering intervention to women in IPV because in the WLC group, participants displayed significant increased levels of anger, anxiety and depression post intervention while the FTF showed several absences and incomplete responses to HELP. We are exploring a WATCH4HELP wearable App that will serve as a symptom management tool for women in IPV. WATCH4HELP users will input information on their current thought/mood/behavior into the user interface via buttons, gestures and voice commands enabling them to connect to a pre-selected information system and/or healthcare provider during specific situations, facilitating coping skills while enhancing perceived social support. It is important for women in IPV to have a WATCH (wearable accessory to call for help) that can be used without fumbling for a phone or other non-wearable device that is not discreetly reachable in times of great disturbance.

Conclusion: Further research should be conducted to determine whether email alone or email plus mobile, text messaging and/or wearable devices are best evidence in delivering interventions using these three and other PROMIS measures.