

Influenza vaccine hesitancy among nursing professionals in Hong Kong

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Background and Conceptual framework

Influenza vaccine hesitancy (VH) among health care workers, defined as spectrum of behaviours and attitudes on delay and refusal of flu vaccine despite availability of vaccines, presents very real threats to vaccination coverage and thus safety of vulnerable patients. To support the planning the tailored and multifaceted interventions, our study aims at characterizing the nature and magnitude of influenza VH among nurses in Hong Kong based on the 3Cs model of vaccine hesitancy.

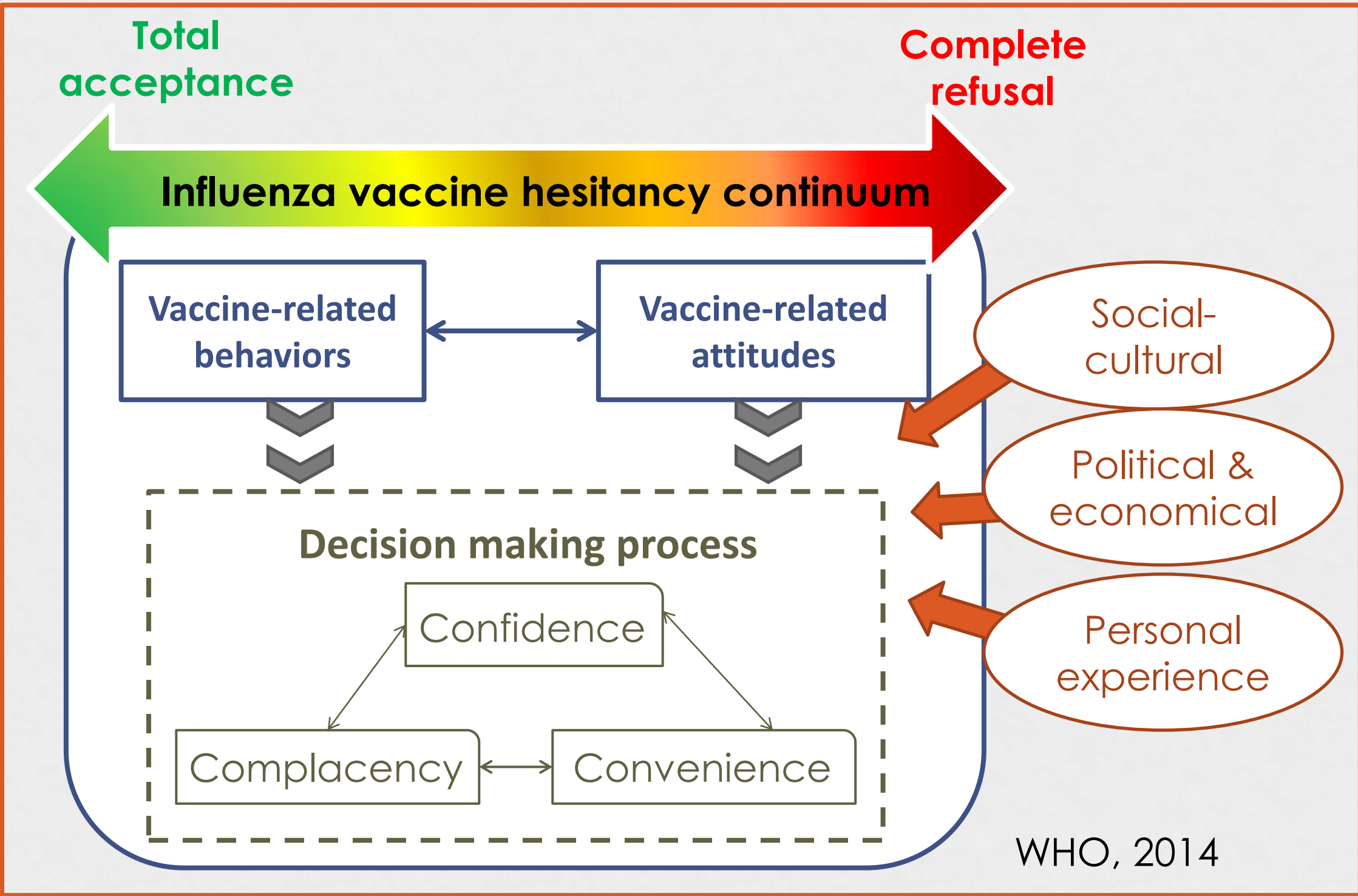


Fig 1. The 3c model of vaccine hesitancy

Interpretations

- High prevalence (66%) of moderate-to-high influenza vaccine hesitancy was estimated among nurses in HK
- “Low vaccine hesitancy”**: characterized by higher level of trust in effectiveness of flu vaccine and recommendations from government, but greater concerns in physical access-convenience of vaccine
- “Moderate vaccine hesitancy”**: distinguished by higher level of engagements in risk-benefit calculation
- “High vaccine hesitancy”**: defined by higher concern on the safety issue of flu vaccine, stronger belief that flu vaccine give influenza-like-illness (ILI) as side effect and perceived undervalue of flu vaccine
- Younger nurses, with university based training and frequent patient contact were associated with higher influenza vaccine hesitancy

Conclusion

Intensified tailored interventions targeting different characteristics and needs of nurses from heterogeneous clusters on vaccine acceptance continuum are recommended.

Methods and Results

Self-administrated online survey conducted on nurses in Hong Kong after the 2017/18 winter influenza season:

Characteristics of study population

- 753 respondents; vaccination coverage 44%
- 88% female; mean age 36 years (S.D. = 10)
- 74% registered nurse; 52% received degree/ equivalent level training; 43% with working experience >10 years
- 79 % worked in acute setting;
- 90% spent at least half of their working time in direct patient contact

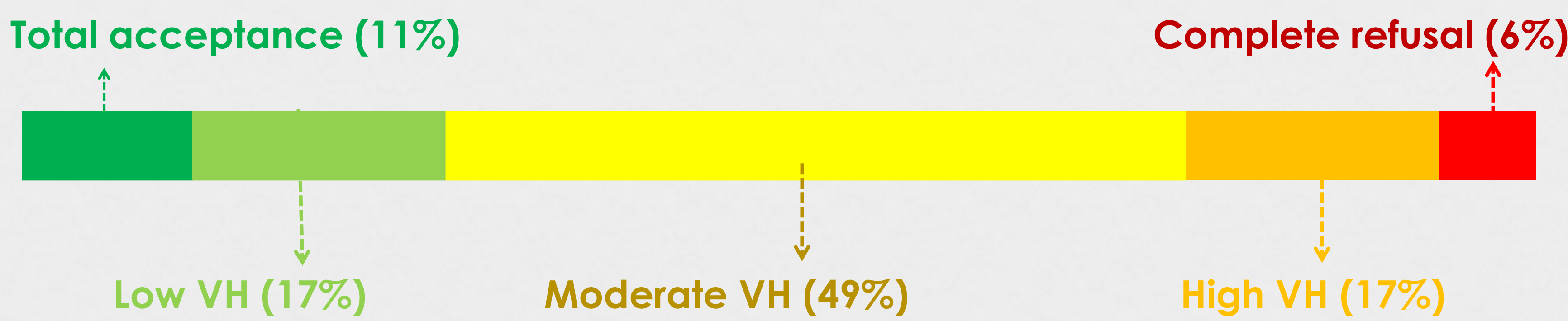


Fig 2. Prevalence of influenza vaccine hesitancy among nurses in Hong Kong by MCA and k-mean cluster analysis

Tab 1. Membership profile, binary logistic regression results by clusters identified on influenza vaccine acceptance continuum

	Low VH	Moderate VH	High VH
Univariable regression: Odds ratio			
Confidence			
Flu vaccine is effective	6.75*	0.65*	0.41*
Concern on safety of flu vaccine	0.38*	1.15	8.33*
Flu vaccine give ILI as side effect	0.20*	0.85	12.53*
Trust government with recommendations of flu vaccination	3.03*	0.17*	1.60
Complacency			
Flu vaccine unnecessary: Perceived strong immune status	0.26*	0.78	8.55*
Flu vaccine unnecessary: Symptoms of influenza not severe	1.83*	1.25	0.17*
Main purpose of vaccination is to protect vulnerable patients	1.81*	0.52*	3.21*
Benefits and risks of vaccination were weighted during decision making	0.32*	7.68*	2.07
Convenience			
Unavailability of free vaccine prevent me from vaccination	0.87	0.93	2.44*
Inconvenient access prevent me from vaccination	6.80*	0.55*	0.26*

*p < 0.05

Tab 2. Determinants shaping influenza vaccine hesitancy: partially constrained generalized logistic regression results

Determinants shaping VH	Cut-point			
	ONE (1 vs. 2+3+4+5) Prop odds ratios	TWO (1+2 vs. 3+4+5)	THREE (1+2+3 vs. 4+5)	FOUR (1+2+3+4 vs. 5)
Demographic				
Age ≥ 50 years			0.58*#	
Professional				
Registered nurses	0.48*	0.48*	0.81	1.75
University based training	3.20*	1.40*	1.07	0.94
Frequent patient contact			1.51*#	
Working in public and community setting			0.66*#	
Newborn & pregnant women caring			0.73*#	
Personal				
Flu vaccine history in student time	0.89	0.66*	0.89	0.13*
Experience of vaccine related side effects	0.85	0.74	1.18	0.26*

*p < 0.05
Single constant odds ratio across all cut-point with the assumption of parallel lines satisfied
1.....Total acceptance; 2.....Low VH; 3.....Moderate VH; 4.....High VH; 5.....Complete refusal

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