The role of health determinants in the influenza vaccination uptake among older adults (65+): a scope review

Aging Clinical and Experimental Research

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Supplementary Table 3: Determinants associated with increase or decrease of VU

Author	VU increase (+) or decrease (-)	Determinants associated with increase or decrease, respectively
Byeon 2018	**+ men**	• Having a spouse/being married • Former smoker/non-smoker • Walking activities • Health examination • Visit of public health centre • Hypertension, diabetes, cardiovascular diseases
	+ women	• Unemployment • Former smoker/non-smoker • Health examinations • Visit of public health centre • Hypertension, diabetes
	- men	• Good subjective health status
	- women	• Alcohol consumption • Good health status
Cha 2016	**+**	• Receiving regular health screenings
Chang 2016	**+**	• Receiving vaccination in previous year • Frequent use of outpatient departments • Undergoing health examinations in previous year
Kwon 2016	**+**	• Recent history of health screening • Higher age (≥ 70 and ≥ 75) • Self-reported health status as unhealthy
	-	• Smoking • Low physical activity
Leung 2017	**+**	• Face-to-face patient education and information material
Mo 2015	**+**	• Female gender • Chronic diseases • Participation in community activities • Knowledge of the fact that vaccine is required every year • Lower perceived side effect • Lower IV price • Recommendations from healthcare providers
Oh 2015	**+**	• Female gender • Increasing age

		• Having health insurance • Having medical check-up • Co-morbidities • Worse self-related health
Wershof-Schwartz 2013	-	• Female gender • Rural residency • Low socio-economic status • Recent immigration • Being from/Having physician from former Soviet Union
Yu 2014	+	• Perceived susceptibility • Female gender • Multimorbidity • Perceived disease severity • Perceived benefit from current vaccination
	-	• Post-vaccination discomfort
Dyda 2015	+	• Female gender • Higher Body-Mass-Index • Requiring assistance in daily tasks • Reporting chronic diseases
	-	• Smokers • Non-English speaking country of birth
Regan 2017	+	• Text Message Reminder
Aguilar 2012	+	• Major chronic conditions • High level of dependence • More visits to the General Practitioner (GP) • IV in the previous season
	-	• Female gender • Age < 80 or > 94 years • Immigrant status • Previous hospitalization
Barbadoro 2016	+	• Role of local policy in favouring VU
	-	• Younger age (65 -79 years compared to ≥ 80 years) • Medium level education • Absence of chronic diseases • Smoking • No GP contact in the last 12 months
Caille-Brillet 2014	+	• Getting vaccinated in previous 2 seasons
Domínguez 2016	+	• 3 or more GP visits in the previous year • IV in any of the previous 3 seasons • 23-valent pneumococcal polysaccharide vaccination

Ganczak 2017	+	• Younger age (< 70 years) • Living in urban area • Co-morbidities • Vaccinated family members • Being informed about vaccination • Willingness for vaccination next year
Giese 2016	-	• Regarded as not necessary • Not thinking about it • Consider themselves not at risk
	- Health care workers	• Regarded as not necessary • Rarely getting influenza disease • Consider themselves not at risk
Godoy 2015	+	• Physician has been vaccinated
	+ Physician	• Worried about infecting patients • Believe in effectiveness • Concerned about getting influenza disease
Hellfritzsch 2017	+	• Higher co-morbidity level • Less likely to never have smoked • Higher prevalence of physical activity • Higher prevalence of major physical limitations • Need for assistance with activities of daily living (ADL)
Martínez-Baz 2012	+	• More physician visits per year
	-	• Female gender • Age (65-69 years or > 95 years) • Hospitalized or diagnosed with any major chronic condition in previous year • Haematological cancer or dementia
Poscia 2016	+	• Communication/Awareness campaigns: System of reminders, recalls, information
Shah 2012	+	• Care home patients with & without dementia • Chronic diseases
	-	• Community-dwelling patients with dementia • Area deprivation
Spreckelsen 2018	+	• Vaccination status before nursing home admission • Region (East-Germany compared to West-Germany) • Number of co-morbidities
Verger 2015	No associations found for age group ≥ 65 years	
Vukovic 2018	-	• Low deprivation index
Blank 2012	+	• Good monitoring systems for VU rates

		• Sending personal letters offering free vaccination • Additional policy elements (e.g. awareness campaigns)
Banach 2012	+	• Dementia
	-	• Female gender • Black race • Living alone
Black 2017	+	• Increasing age (≥ 85 years compared to 75-84 years and 65-74 years) • Female gender • Chronic medical conditions associated with higher risk for influenza-related complications
	-	• Race/Ethnicity: Non-hispanic blacks and Hispanic
Farmanara 2018	-	• Younger age (65-70 years compared to > 70 years) • Lower education level • No chronic medical conditions
Hurley 2018	+	• Receipt of any needed vaccine (tetanus, diphtheria, acellular pertussis or pneumococcal besides influenza) • Centralized reminder/recall system
	-	• Prior refusal • Male gender • Older age (≥ 85 years)
Kaljee 2017	Factors affecting VU in general	• Healthcare access and utilization • Communication and information sources • Social networks • Disease experience, knowledge and perceptions • Vaccine experience, knowledge and perceptions
Khan 2018	+	• Disability
	-	• Race/Ethnicity: Non-hispanic blacks and Hispanic
Lu 2014	-	• Member of ethnic minority group • Lower education • Unemployment • Chronic conditions • Last routine check-up > 1 year ago • Absence of personal doctor
Lu 2018	+	• Doctors visit, receiving provider recommendation
McIntyre 2014	+	• Recommendation by, and trust in, health professionals • Believe in effectiveness
	-	• Fear of adverse reactions

		• Believe in resilience
Pereira 2019	+	• High-dose vaccine if free of cost
Takayama 2012	+	• Higher age • Prior diagnoses of chronic conditions (except myocardial infarction and stroke)
	-	• Non-white race • Lower household income • Lacking health care coverage • Smokers • Physical inactivity • Reporting days of poor physical health in past month
Wooten 2012	+	• Believe in effectiveness • Higher education • Doctor's visit during flu season • Believe in personal susceptibility • Little concern of side effects
Yokum 2018	+	• Receipt of single mailed letters
Francisco 2015	+	• Male gender • Slow gait speed • Social involvement
	-	• Higher level of education
Sato 2015	+	• Higher age (≥ 80 years compared to 70-79 years)
Doherty 2016	-	• Negative attitudes and beliefs regarding vaccination • Failure of health care provider to recommend vaccination • Lack of knowledge of vaccine safety and effectiveness • Perceived susceptibility • Lack of awareness of national recommendations
Kan 2018	Factors affecting VU in general	• Demographic factors – Age – Sex – Living with others • Health promotion factors – Health status and self-perceived health status – Health habits and medical service use • Knowledge/information and its sources • Health behaviour factors

		– Threat perception – Perceived barriers – Cues to action – Behavioural beliefs – Subjective norms – Past behaviour
Thomas 2018	+	• Reminder/recall by letter plus leaflet or postcard • Patient outreach by retired teachers • Invitations by clinic receptionists • Patient education by nurses/pharmacists • Patient counselling by medical students • Patient vaccination by nurses • Multiple recall questionnaires • Payments to physician • Physician reminders • Posters in clinics • Chart reviews/benchmarking

Supplementary Table 3. Supplementary Table 3 illustrates the determinants associated with increase or decrease of VU for each article analysed, respectively. Green rows equipped with a plus sign indicate VU increase, red rows with a minus sign display determinants decreasing VU. Some studies did not clearly figure out results of VU increase or decrease but present factors affecting VU in general.