

Appendix A: Summarization of Direct-To-Consumer Health Literacy Interventions

Reference Number	Publication Year	Intervention type	Subjects	Information disseminated or examined	Primary and secondary measures	Results
12	2012	Educational web portal	Norwegian parents with young children	Health literacy skills (searching for health information and appraising research-based information)	Primary: attitudes for searching for health information and health literacy skills Secondary: usability, usefulness, and credibility of web portal	-Web portal usage led to improved attitudes toward searching for health information; -No statistically significant changes in health literacy skills
15	2012	Educational web portal in classroom setting	Old adults (>60 years old)	Solving health problems using health information from electronic sources	Primary: computer/web knowledge and computer efficacy pre/post-intervention Secondary: usability and usefulness of websites	- Changes in computer knowledge and efficacy were statistically significant; -Website was reported to be useful
16	2012	Physical kiosk	Low-literacy Latino community	Diabetes self-management education modules	Primary: self-reported data on behavior change intention	84.92% (152) individuals intend to make a change
17	2013	Virtual advisor	Elderly Latino community	Tailored messages to enhance knowledge about living a physically active life	Primary: differences in physical activity between groups Secondary: sustainability after intervention	-Intervention groups reported higher walking times -All but one individual utilized advisor post-study
18	2013	Personally controlled health management system (PCHMS)	Australian adults recruited from a university setting	How consumers used social features of a PCHMS	Primary: consumer help-seeking behaviors Secondary: useful features in a PCHMS	-Social contact influenced in decision for seeking help -Poll and forum are engaging features
19	2013	Educational web portal	Diabetic African-American adults	Diabetes self-management education modules	Primary: differences in diabetes knowledge between groups	-Intervention group reported higher scores than the paper-based control group
22	2014	Computer-based programmed instruction	Male veterans with Type 2 diabetes mellitus	Diabetes self-management education module over specific medication	Primary: differences in medication knowledge between groups Secondary: differences in patient satisfaction between groups	-No statistically significant differences in medication knowledge -Intervention group had high patient satisfaction compared to control

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24	2015	Personal health record (Microsoft HealthVault)	Type 2 diabetics	How Type 2 diabetic patients interacted with an untethered PHR	Primary: themes related to PHR usage	-Positive themes: increased awareness and behavioral change -Negative themes: lack of patient-provider engagement and barriers in computer literacy
26	2015	iPod Touch application	Rural dwellers with Type 2 diabetes	Diabetes self-management education modules with videos and reminders	Primary: changes in diabetes knowledge and literacy pre/post test Secondary: usage of application and initial thoughts	-Changes in diabetes knowledge and literacy were clinically significant -Users appreciated real depiction of challenges in videos
27	2018	Personal health record	Families in the UK	How families interacted with a PHR in managing a serious chronic condition	Primary: themes related to PHR usage	-Classified families based on coping style: controllers, collaborators, cooperators, and avoiders
32	2018	WhatsApp	Female Type 2 diabetics in Saudi Arabia	Weekly tailored messages about general diabetes and care	Primary: Differences in diabetes knowledge and self-efficacy between groups	-Statistically significant differences in diabetes knowledge and self-efficacy between groups
33	2018	Mobile personal health record	South Korean individuals	Examined type of data generated and identifying usage patterns	Primary: identifying characteristics and usage of patterns of users who measured health management (BP, blood glucose, and weight) data versus risk management data (Cardiovascular and metabolic syndrome risk)	-Continuous data (BP, blood glucose, and weight) was generated more than discrete and/or data required user input -Long term users were diabetics
35	2018	Mobile dietary coaching application	Japanese adults with a BMI greater than 25	Tailored feedback over meal choices and answers to dietary questions	Primary: differences in weight change between groups Secondary: frequency of meal photo uploads	-Intervention group reported higher weight loss than control group -Higher photo uploads was associated with changes in body weight
37	2019	iPod personal health record	Adults with a confirmed HIV diagnosis	Educational sessions on HIV literacy, eHealth, and PHR usage	Primary: differences in Patient Activation Measure (PAM) between groups Secondary: differences in eHealth literacy, viral load, and self-	-Intervention group showed greater changes in PAM and eHealth literacy than control group

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					efficacy, or health status between groups	-No statistically significant changes in viral load, health status, or self-efficacy
38	2019	Educational web portal and videos	Adults within an ethnic minority group	Video modules about health plan benefits and eligibility requirements	Primary: differences in insurance health literacy and intention to seek insurance help between groups	-Intervention groups had improved knowledge of health insurance and had increased intent to seek help
39	2019	Hypothetical personal health record on computer	Chinese adults with basic literacy skills	Presentation of health data in various formats	Primary: Number of errors between groups (old vs. young) Secondary: Changes in performance related to presentation format	-Young adults performed significantly better than old adults -Visual-cue enhanced line graphs and tables yielded best results
40	2020	Web-based expert support	South Korean women with breast cancer	Verbal persuasion and feedback over health dietary and lifestyle data	Primary: differences in body fat and waist circumference between groups Secondary: differences in nutrition and physical exercise self-efficacy between groups	-Intervention groups had higher differences in primary outcomes than control group -No significant differences in self-efficacy between groups
41	2020	Smartphone nutrition education program	Iranian mothers with undernourished children	Interactive care guide on nutrition principles, feeding methods, and mothers' health	Primary: change in wasting status of child between groups Secondary: change in mother's nutritional literacy between groups	-Children in intervention group showed greater improvements in wasting than control group -Mothers in intervention group reported greater improvement in nutrition literacy than control group