Health Education

1- Education Improves Public Health and Promotes Health Equity

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Abstract:
This article describes a framework and empirical evidence to support the argument that educational programs and policies are crucial public health interventions. Concepts of education and health are developed and linked, and we review a wide range of empirical studies to clarify pathways of linkage and explore implications. Basic educational expertise and skills, including fundamental knowledge, reasoning ability, emotional self-regulation, and interactional abilities, are critical components of health. Moreover, education is a fundamental social determinant of health - an upstream cause of health. Programs that close gaps in educational outcomes between low-income or racial and ethnic minority populations and higher-income or majority populations are needed to promote health equity. Public health policy makers, health practitioners and educators,and departments of health and education can collaborate to implement educational programs and policies for which systematic evidence indicates clear public health benefits.

2- Virtual Reality for Health Professions Education: Systematic Review and Meta-Analysis by the Digital Health Education Collaboration

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Abstract:

Background: Virtual reality (VR) is a technology that allows the user to explore and manipulate computergenerated real or artificial three-dimensional multimedia sensory environments in real time to gain practical knowledge that can be used in clinical practice.
Objective: The aim of this systematic review was to evaluate the effectiveness of VR for educating health professionals and improving their knowledge, cognitive skills, attitudes, and satisfaction.
Methods: We performed a systematic review of the effectiveness of VR in pre- and postregistration health professions education following the gold standard Cochrane methodology. We searched 7 databases from the year 1990 to August 2017. No language restrictions were applied. We included randomized controlled trials and cluster-randomized trials. We independently selected studies, extracted data, and assessed risk of bias, and then, we compared the information in pairs. We contacted authors of the studies for additional information if necessary. All pooled analyses were based on random-effects models. We used Health Education Highly Cited Articles the Grading of Recommendations, Assessment, Development and Evaluations (GRADE) approach to rate the quality of the body of evidence.
Results: A total of 31 studies (2407 participants) were included. Meta-analysis of 8 studies found that VR slightly improves postintervention knowledge scores when compared with traditional learning (standardized mean difference [SMD]=0.44; 95% CI 0.18-0.69; I-2=49%; 603 participants; moderate certainty evidence) or other types of digital education such as online or offline digital education (SMD=0.43; 95% CI 0.07-0.79; I-2=78%; 608 participants [8 studies]; low certainty evidence). Another meta-analysis of 4 studies found that VR improves health professionals' cognitive skills when compared with traditional learning (SMD=1.12; 95% CI 0.81-1.43; I-2=0%; 235 participants; large effect size; moderate certainty evidence). Two studies compared the effect of VR with other forms of digital education on skills, favoring the VR group (SMD=0.5; 95% CI 0.32-0.69; I-2=0%; 467 participants; moderate effect size; low certainty evidence). The findings for attitudes and satisfaction were mixed and inconclusive. None of the studies reported any patient-related outcomes, behavior change, as well as unintended or adverse effects of VR. Overall, the certainty of evidence according to the GRADE criteria ranged from low to moderate. We downgraded our certainty of evidence primarily because of the risk of bias and/or inconsistency.
Conclusions: We found evidence suggesting that VR improves postintervention knowledge and skills outcomes of health professionals when compared with traditional education or other types of digital education such as online or offline digital education. The findings on other outcomes are limited. Future research should evaluate the effectiveness of immersive and interactive forms of VR and evaluate other outcomes such as attitude, satisfaction, cost-effectiveness, and clinical practice or behavior change.

3- The Causal Effect of Education on Health: What is the Role of Health Behaviors?

By:
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Abstract:
We investigate the causal effect of education on health and the part of it that is attributable to health

behaviors by distinguishing between short-run and long-run mediating effects: whereas, in the former, only behaviors in the immediate past are taken into account, in the latter, we consider the entire history of behaviors. We use two identification strategies: instrumental variables based on compulsory schooling reforms and a combined aggregation, differencing, and selection on an observables technique to address the endogeneity of both education and behaviors in the health production function. Using panel data for European countries, we find that education has a protective effect for European men and women aged 50+. We find that the mediating effects of health behaviorsmeasured by smoking, drinking, exercising, and the body mass indexaccount in the short run for around a quarter and in the long run for around a third of the entire effect of education on health. Copyright (c) 2015 John Wiley & Sons, Ltd.

4- Decolonizing Global Health Education: Rethinking Institutional Partnerships and Approaches

By:
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Abstract:
Global health often entails partnerships between institutions in low- and middle-income countries (LMICs) that were previously colonized and high-income countries (HICs) that were colonizers. Little attention has been paid to the legacy of former colonial relationships and the influence they have on global health initiatives. There have been recent calls for the decolonization of global health education and the reexamination of assumptions and practices under pinning global health partnerships.
Medicine's role in colonialism cannot be ignored and requires critical review. There is a growing awareness of how knowledge generated in HICs defines practices and informs thinking to the detriment of knowledge systems in LMICs. Additionally, research partnerships often benefit the better-resourced partner.
In this article, the authors offer a brief analysis of the intersections between colonialism, medicine, and global health education and explore the lingering impact of colonialist legacies on current global health programs and partnerships. They describe how "decolonized" perspectives have not gained sufficient traction and how inequitable power dynamics and neocolonialist assumptions continue to dominate. They discuss 5 approaches, and highlight resources, that challenge colonial paradigms in the global health arena. Furthermore, they argue for the inclusion of more transfor mative learning approaches to promote change in attitudes and practice. They call for critical reflection and concomitant action to shift colonial paradigms toward more equitable partnerships in global education.
Health Education Highly Cited Articles

5- Serious Gaming and Gamification Education in Health Professions: Systematic Review

By: Gentry, SV (Gentry, Sarah Victoria) [1] , [2] ; Gauthier, A (Gauthier, Andrea) [3] ; Ehrstrom,

BL (Ehrstrom, Beatrice L'Estrade) [4] ; Wortley, D (Wortley, David) [5] ; Lilienthal, A (Lilienthal, Anneliese) [4] ; Car, LT (Car, Lorainne Tudor) [6] ; Dauwels-Okutsu, S (Dauwels-Okutsu, Shoko) [7] ; Nikolaou, CK (Nikolaou, Charoula K.) [8] ; Zary, N (Zary, Nabil) [4] , [9] , [10] ; Campbell, J (Campbell, James) [11] ; ...More

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Abstract:
Background: There is a worldwide shortage of health workers, and this issue requires innovative education solutions. Serious gaming and gamification education have the potential to provide a quality, costeffective, novel approach that is flexible, portable, and enjoyable and allow interaction with tutors and peers.
Objective: The aim of this systematic review was to evaluate the effectiveness of serious gaming/gamification for health professions education compared with traditional learning, other types of digital education, or other serious gaming/gamification interventions in terms of patient outcomes, knowledge, skills, professional attitudes, and satisfaction (primary outcomes) as well as economic outcomes of education and adverse events (secondary outcomes).
Methods: A comprehensive search of MEDLINE, EMBASE, Web of Knowledge, Educational Resources Information Centre, Cochrane Central Register of Controlled Trials, PsycINFO, and Cumulative Index to Nursing and Allied Health Literature was conducted from 1990 to August 2017. Randomized controlled trials (RCTs) and cluster RCTs were eligible for inclusion. Two reviewers independently searched, screened, and assessed the study quality and extracted data. A meta-analysis was not deemed appropriate due to Health Education Highly Cited Articles the heterogeneity of populations, interventions, comparisons, and outcomes. Therefore, a narrative synthesis is presented.
Results: A total of 27 RCTs and 3 cluster RCTs with 3634 participants were included. Two studies evaluated gamification interventions, and the remaining evaluated serious gaming interventions. One study reported a small statistically significant difference between serious gaming and digital education of primary care physicians in the time to control blood pressure in a subgroup of their patients already taking antihypertensive medications. There was evidence of a moderate-to-large magnitude of effect from five studies evaluating individually delivered interventions for objectively measured knowledge compared with traditional learning. There was also evidence of a small-to-large magnitude of effect from 10 studies for improved skills compared with traditional learning. Two and four studies suggested equivalence between interventions and controls for knowledge and skills, respectively. Evidence suggested that serious gaming was at least as effective as other digital education modalities for these outcomes. There was insufficient evidence to conclude whether one type of serious gaming/gamification intervention is more effective than any other. There was limited evidence for the effects of serious gaming/gamification on professional attitudes. Serious gaming/gamification may improve satisfaction, but the evidence was limited. Evidence was of low or very low quality for all outcomes. Quality of evidence was downgraded due to the imprecision, inconsistency, and limitations of the study.
Conclusions: Serious gaming/gamification appears to be at least as effective as controls, and in many studies, more effective for improving knowledge, skills, and satisfaction. However, the available evidence is mostly of low quality and calls for further rigorous, theory-driven research.