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Original Research

Is YouTube Useful as a Source of Health Information for Adults With Type 2 Diabetes? A South Asian Perspective

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Key Messages

- YouTube is commonly used to disseminate health information but may contain videos that portray misleading information and contradict evidence-based standards.
- Two-thirds of videos included in our review were rated as useful, but misleading videos were more popular than useful videos.
- Videos culturally tailored to the South Asian community were of similar quality to nontailored videos and were not more likely to be rated as misleading.

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ABSTRACT

Objectives: To investigate the content, quality and popularity of information about type 2 diabetes available on YouTube.
Methods: We searched YouTube with the terms Diabetes, Diabetes type 2, Diabetes South Asians, Diabetes Punjabi and Diabetes Hindi to identify videos concerning type 2 diabetes. A team of health-care providers independently classified the first 20 videos from each search as useful, misleading, or personal experience, rated them on a 5-point global quality scale (GQS) and categorized their content on a 26-point scale in duplicate. Useful videos were rated for reliability by using a 5-point modified DISCERN scale. Higher scores represent better quality, reliability and comprehensiveness.
Results: Of 100 videos, 71 met the inclusion criteria; 45 (63.4%) were rated as useful (median GQS, 3; interquartile range [IQR], 2 to 4); and 23 (32.4%) were deemed misleading (median GQS, 1; IQR, 1 to 2). Median reliability and content scores for useful videos were 3 (IQR, 2 to 3) and 5 (IQR, 3 to 10), respectively, and 6 videos met ≥ 4 of 5 reliability criteria. Overall, misleading videos were more popular than useful videos (median, 233 views/day; IQR, 26 to 523; vs. 8.3 views/day; IQR, 0.4 to 134.6; $p<0.01$). Culturally tailored videos were just as likely to be misleading and had similar GQS scores in comparison to nonculturally tailored videos (32.1% vs. 32.6% and 3 vs. 3, respectively).
Conclusions: The quality of identified videos concerning type 2 diabetes was variable, and misleading videos were popular. Further creation and curation of high-quality video resources is required.

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RÉSUMÉ

Objectifs : Examiner le contenu, la qualité et la popularité de l'information sur le diabète de type 2 disponible sur YouTube.
Méthodes : Nous avons effectué des recherches sur YouTube à l'aide des termes « diabète », « diabète de type 2 », « diabète Asiatiques du Sud », « diabète punjabi » et « diabète hindi » pour trouver des vidéos sur le diabète de type 2. Une équipe de prestataires de soins de santé ont classifié de manière autonome les 20 premières vidéos de chaque recherche en trois catégories : les vidéos utiles, les vidéos trompeuses ou les vidéos sur l'expérience de patients. Ensuite, ils ont classé les vidéos selon une échelle de qualité globale (ÉQG) à 5 points et ont catégorisé leur contenu sur une échelle de 26 points en duplicata. L'échelle DISCERN modifiée à 5 points a permis d'évaluer la fiabilité des vidéos utiles. Les scores plus élevés représentent des vidéos de meilleure qualité, plus fiables et exhaustives.
Résultats : Parmi les 100 vidéos, 71 répondaient aux critères d'inclusion, 45 (63,4 %) étaient classées dans la catégorie des vidéos jugées utiles (ÉQG médiane, 3; intervalle interquartile [IIQ], 2 à 4); 23 (32,4 %) étaient considérées comme trompeuses (ÉQG médiane, 1; IIQ, 1 à 2). La fiabilité et les scores de contenu médians des vidéos utiles étaient respectivement de 3 (IIQ, 2 à 3) et de 5 (IIQ, 3 à 10), et seules 6 vidéos ont obtenu des oui à au moins 4 des 5 critères de fiabilité. Dans l'ensemble, les vidéos trompeuses étaient plus populaires que les vidéos utiles (médiane, 233 visionnements/jour; IIQ, de 26 à 523) *vs* 8,3 visionnements/jour (IIQ, de 0,4 à 134,6; p<0,01). Les vidéos qui tenaient compte des réalités culturelles comparativement aux vidéos qui ne tenaient pas compte des réalités culturelles (32,1 % *vs* 32,6 % et 3 *vs* 3, respectivement) étaient tout aussi susceptibles d'être trompeuses et avaient des scores semblables à l'ÉQG. Toutefois, seules 11 vidéos étaient utiles et avaient des scores élevés à l'ÉQG.
Conclusions : Bien que la qualité des vidéos sur le diabète de type 2 était variable, les vidéos trompeuses étaient populaires. La création et la conservation de nouvelles ressources de vidéos de grande qualité sont nécessaires.

Introduction

Approximately 8.7% of the adult Canadian population was living with diabetes in 2008/2009 (1). South Asian individuals, those who originate from the Indian subcontinent, are at higher risk for developing type 2 diabetes than is the general population, regardless of whether they live in South Asia or Western countries (2,3). For example, South Asians in Canada have 2 to 3 times the rate of diabetes compared to the overall population (4), and new cases of diabetes have been found to affect young to middle-aged South Asians disproportionately (5). Type 2 diabetes is associated with increased risks for myocardial infarction, stroke and peripheral vascular disease, and a recent systematic review of Canadian data suggested that the prevalence of cardiovascular disease is higher in South Asian people (5.7% to 10.0%) than in Caucasians (5.4 to 5.7%) (6,7). In Canada, adults with diabetes have mortality rates that are 2 times higher than those of adults without diabetes, and this number is estimated to be higher in South Asian patients (2,8). These statistics have led to several targeted Canadian programs to improve the detection and management of diabetes and associated cardiovascular risk in South Asian people (9–13).

Clinical practice guidelines advocate self-management education for all people with diabetes, and although web-based resources are not a substitute for patient-provider relationships, it is well known that large proportions of Canadian and American adult Internet users (~70%) look for health information online (14–16). There is a growing body of evidence that e-health, Internet and social media-based interventions can improve the prevention and management of chronic diseases and lifestyle-related chronic-disease risk factors (17). YouTube, one of the most popular video-sharing sites on the Internet, is increasingly being used as a platform to disseminate health information and may be a tool to assist in education regarding the prevention and management of type 2 diabetes among South Asian Internet users (18).

Despite this, the quality of health information online has been a concern; a systematic review revealed that studies have documented the availability of both high- and low-quality information (19). Searching for health information online is typically classified as a low-risk activity, but a review has documented cases of harm as a result of online misinformation (20). Evaluation of the content and quality of information contained in YouTube videos has become popular, and many studies have explored general health topics, such as sun safety (21) and concussions (22), or common chronic conditions, including hypertension (23), asthma (24), chronic obstructive pulmonary disease (25) and hip arthritis (26). A systematic review of 18 studies investigating health-care information on YouTube through 2013 found that YouTube contains videos that portray misleading information that contradict evidence-based reference standards (18). A recent study exploring the content of diabetes footcare videos is consistent with this systematic review and suggested that 50% of identified videos were not useful, but a second study reported that the YouTube search algorithm favours the presence of reliable videos in upper-rank positions in diabetes-related searches (27,28). Despite this, neither study characterized or evaluated the content of videos resulting from a search of the terms "diabetes" or "diabetes type 2", nor have they investigated the quality of culturally tailored health information available on YouTube.

The objective of the current study was to explore the content, quality and popularity of information for patients with type 2 diabetes that is available on YouTube. Given that some segments of the South Asian population in Canada face challenges in diabetes prevention and self-management due to such factors as limited understanding of diabetes, language barriers, low literacy rates and preferences for alternative medicines, we also aimed to explore whether videos culturally adapted to South Asians are of higher or lower quality than videos that are not culturally tailored (29–31).

Methods

Search strategy

Five distinct YouTube search phrases were used to identify videos containing information about epidemiology, risk factors, symptoms, diagnosis, treatment and other information regarding type 2 diabetes: "Diabetes", "Diabetes type 2", "Diabetes South Asians", "Diabetes Punjabi" and "Diabetes Hindi". The terms were chosen in consultation with patients and using Google Trends. The