

**CONCLUSIONS:**

Patient aspects can be incorporated into rapid HTAs using systematic and pragmatic approaches to identifying and summarizing qualitative literature. Future rapid HTAs by SHTG may include syntheses of qualitative studies rather than summaries. Patient submissions are also being piloted as a method of collating patient experiences.

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## PD22 Behavioral Factors Mediating Between Socioeconomic Status And Obesity

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**INTRODUCTION:**

China has the largest obese population in the world and its prevalence is increasing faster and faster. The researchers are investigating the association between the socioeconomic status (SES) and obesity in several ways. However, SES may not only play a direct impact on obesity but influences health behaviors which, in turn, affect obesity. The mediating factors have rarely been studied. This study investigates the association between SES and obesity mediated by behavioral factors among adults in China.

**METHODS:**

The longitudinal data including 110,449 individuals were obtained from the eight waves of the China Health and Nutrition Survey from 1991–2011. The outcome of obesity was measured using Body Mass Index (BMI). The SES factors include education and income (low, medium and high). Mediating factors include alcohol consumption, smoking status, diet and physical activity. A variety of statistical models were used to investigate the association between SES and obesity. Age/gender-adjusted prevalence of obesity was calculated and multiple-logistic regression was used.

**RESULTS:**

To some extent, SES influenced BMI directly, positively in men and inversely in women, respectively. SES may also operate through behavioral factors. These

associations were not always straightforward, and changes in SES might create some offsetting risks. Behavioral factors including alcohol consumption, smoking status, diet and physical activity were associated with SES indicators in all groups. In addition, the prevalence was higher in urban areas than rural areas in China. Several pathways for different SES groups leading to obesity were simulated.

**CONCLUSIONS:**

Higher SES groups are more likely to have higher BMI compared to lower SES groups. Different SES groups have different significant mediating risk factors. The pathways between SES and obesity are complex. This study suggests that it is necessary to apply different interventions to different SES individuals especially focused on the disadvantaged populations according to their different behaviors and preference.

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## PD24 Data Collection By Patient Groups To Provide Patient Input

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**INTRODUCTION:**

The Canadian Agency for Drugs and Technologies in Health (CADTH) Common Drug Review and pan-Canadian Oncology Drug Review programs incorporate perspectives and experiences from patients and family members who might be affected by the resulting funding recommendation. Perspectives are provided by patient groups who use different approaches to gather patient input.

**METHODS:**

We analyzed a random sample of ninety-three patient input submissions, drawn from a sampling frame of 532 submissions given to CADTH between June 2010 and June 2016. We looked at how groups described their information gathering methods in the original submissions or the published Clinical Guidance Reports.

**RESULTS:**

Approaches were categorized according to whether they involved primary (n = 86) or secondary data

collection (n = 130) and further sub categorized according to how data was collected. Primary data included: personal experiences, as described by the submission's author (n = 16); surveys conducted specifically for the submission (n=34); and new interviews of patients and family members on disease and drug experiences (n = 36). Half (forty-seven of ninety-three) of the patient input submissions included experiences of one or more patients who had received the drug under review. Secondary data included: published literature (n = 31); existing surveys (n = 27); past conversations with patients and family members (n = 36); experiences of patient group staff interacting with patients and family members (n = 19); and advice from clinical experts (n = 17). Many patient input submissions (sixty-eight out of ninety-three) reported multiple approaches to collect data. Use of two approaches was most common (thirty-seven out of ninety-three) with five or six approaches used in three of ninety-three submissions.

**CONCLUSIONS:**

Despite resource and timing challenges, many patient groups gather primary data to share with CADTH and find individuals with experience of the drug under review.

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## PD25 Principal Component Approximation: Medical Expenditure Panel Survey

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**INTRODUCTION:**

Principal component analysis (PCA) is important to summarize data or reduce dimensionality. However, one disadvantage of using PCA is the interpretability of the principal components (PCs), especially in a high-dimensional database. This study aims to analyze the patterns of variance accumulation according to PCA loadings and to approximate PCs with input variables from sample data sets.

**METHODS:**

There were three data sets of various sizes used to understand the performance of PC approximation:

Hitters; SF-12v2 subset of the 2004 to 2011 Medical Expenditure Panel Survey (MEPS); and, the full set of 1996 to 2011 MEPS data. The variables in three data sets were first centered and scaled before PCA. PCs approximation was studied with two approaches. First, the PC loadings were squared to estimate the variance contribution by variables to PCs. The other method was to use forward-stepwise regression to approximate PCs with all input variables.

**RESULTS:**

The first few PCs represented large portions of total variances in each data set. Approximating PCs using stepwise regression could more efficiently identify the input variables that explain large portions of PC variances than approximating according to PCA loadings in three data sets. It required few numbers of variables to explain more than eighty percent of the PC variances.

**CONCLUSIONS:**

Approximating and interpreting PCs with stepwise regression is highly feasible. Approximating PCs can help i) interpret PCs with input variables, ii) understand the major sources of variances in data sets, iii) select unique sources of information and iv) search and rank input variables according to the proportions of PC variance explained. This is an approach to systematically understand databases and search for variables that are highly representative of databases.

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## PD26 Principal Component Approximation: Canadian Health Measures Survey

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**INTRODUCTION:**

Principal component analysis (PCA) is used for dimension reduction and data summary. However, principal components (PCs) cannot be easily interpreted. To interpret PCs, this study compares two methods to approximate PCs. One uses the PCA loadings to understand how input variables are projected to PCs. The other uses forward-stepwise regression to determine the proportions of PC variances explained by input variables.