

Cycles of attention to fad diets and internet search trends by Google trends

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Abstract *This work aimed at identifying, describing and analyzing news content associated with Google search cycles linked to eight types of diet: ketogenic; moon; protein; soup; detox; points; paleo; and Dukan. They were selected because they were pointed out by Google Trends® (GT) as the most often associated with the term “diet”. The content of sites linked to the highest search peaks was pointed out by Google News®. The volume of search attempts for diets was estimated by the GT with region filters (Brazil) and theme (Health) considering the period from 01/01/2012 to 01/01/2017. Results: hits portray ephemeral cycles, with hundreds of peaks and declining interest in the eight fad diets. The emphasis is on guidelines for quick weight loss in favor of optimal health as a proxy for an esthetic ideal. The scale of the risks associated with the more restrictive diets is often quoted and validated by expert information. The exposure and influence of the opinion of celebrities reporting their dietary experiences stand out. Contrary to the ideal of moderation, variety, and balance, fad diets portray the pressure for food self-control as a resource for building an idealized body typified by celebrity images.*

Key words *Fad diets, Social media, Consumer health information, Internet*

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Introduction

The internet has become an abundant and accessible source of health information in the midst of which many issues of food and nutrition have been placed at a distinctive level of exposure and concern^{1,2}. Access to sufficient information seems to shape demands and establish gaps in the idea of healthy eating³ because of the quantity, diversity and centrality of certain types of information widely available to specialists, lay consumers and health content replicators⁴. In this field, information on diets – whether for weight loss, detoxification, control of morbid conditions or similar purpose – fill hundreds of thousands of sites with contents that seek to attend to various types of fruition⁵.

Increasingly sophisticated algorithms have been developed in recent years to analyze search trends for words and terms in Google, as a proxy for the cycles of collective interest directed to certain subjects. The massive volume of data produced by georeferenced daily search attempts (i.e. search attempts associated with specific regions) registered by Google Trends (GT – <https://www.google.com/trends>) can provide insightful insights into what, where and when (as well as associated with what) are linked to search attempts of a given population – a term already consecrated in the literature as seeking behavior⁶⁻¹². Search trends can – in a simple, transparent and inexpensive way – predict the present in a variety of ways and under several aspects, by providing support for the analysis of sociocultural phenomena seldom studied by such means¹³⁻²⁰. Several authors perceive that estimates of the volume of public health search attempts appear promising concerning cultural aspects relevant to the formulation of public policies, complementing and broadening the understanding of existing databases²¹⁻²⁶. Until recently, the study of search terms swings was used solely by marketing specialists, for marketing purposes, in order to identify product consumption trends in collateral associations with elements of the fruition culture. However, the so-called search behavior has also proved useful in outlining time series that indicate cycles of collective interest (CCI) driven by fashions, rumors, journalistic material and, above all, the behavior of influential celebrities²⁷⁻³⁰. Although of limited value in the qualitative analysis of socially constructed meanings, it is sensitive to influences related to themes of collective health interest, in the role of markers of ephemeral cultural phenomena and, therefore,

under-dimensioned³¹⁻³⁵. Thus, this work aimed to identify, describe and analyze news content associated with peaks of interest in fad diets, by examining the role played by social actors under the media lenses on the consumption of information in this field.

Methods

Google Trends (GT) shows estimates that allow you to size up search trends on topics of interest broken down into geographical boundaries (states, countries, or worldwide); thematic categories (health, science, news, travel among others) as well as temporal delimitations (specific periods, last five years, last week, and so forth). The GT algorithms normalize data from a total number of search attempts in a particular region/period on a scale ranging from 0 (search volume less than 1% regarding the peak of popularity) to 100 (peak hits) shown as Relative Search Volumes (RSV).

By definition, RSVs are always smaller than 100 (Y-axes of charts), depicting search attempts in relative values, comparable to higher-access volumes over a period. The representation in proportions corrects the absolute number of search attempts considering a swinging number of Internet accesses in a given region. The methodology used by the GT is described in detail on its website³⁶ as well as in several other works of the literature^{14,21-26}.

The fad diets were chosen based on bibliographical reviews and lay literature, also considering the stories and news associated with the term diet by Google Trends. A clean search was performed in the data collection after deleting navigation data and cookies that could influence the search history. The eight diets with the highest visibility were chosen, that is, the ones that returned with sufficient data volume to the analysis: ketogenic diet; moon diet; protein diet; soup diet; detox diet; points diet; Dukan diet and paleo (Paleolithic) diet. We selected search terms – in Brazilian Portuguese – that refer specifically to these diets in the forms of spelling that generated the most substantial results (e.g., the term paleo diet was used for search attempts on paleolithic diet), as usually described in other works. Diets cycles were searched from the last 261 weeks (from January 01, 2012 to January 01, 2017) with region filters (Brazil) and subject topic (Health). The data were imported as CSV files (Comma-separated values) for spreadsheets (MS Ex-

cel®) and the annual means with standard deviations and trend lines (second-order polynomials) were calculated there. Diet curves were tabulated in eight independent series, knowing that GT produces results comparing access curves to the most famous peak – which could underestimate the estimates of less popular diets.

News items (Chart 1) related to the study object were also analyzed. The same search descriptors were used for the diets to select the stories, and the first four news items mentioned in Google News® were included in the search in the peak search periods of each fad diet, also considering those that preceded the search peaks by up to two days, totaling 32 news items.

The option of Google tools was based on their technical and innovation possibilities in approaching the proposed theme. Also, as pointed out in ranking surveys of Alexa³⁷ – Web analytics services provider – this is the most accessed site in Brazil and the world to search for information through direct access via Google.com.br or Google.com.

Results and discussion

The relative volume of search attempts of the diets and cycles of attention

The most evident results – somewhat familiar to all diets – point to fleeting interest, with no CCIs sustained for long periods (Figures 1 to 8). There are numerous peaks of access to each diet that express the ephemeral nature of interest (usually linked to weight loss) and not committed to sustained hegemonic attention. In general, peaks of attention occur mainly between September and January, eminently in the months nearing the year-end, which could be described as a kind of summer effect or end of year festivities effect.

The ketogenic diet had a slow upward trend line with dozens of sporadic peaks with the highest concentration in the last months of 2016 between 247th and 255th week (Figure 1). All of the stories associated with these peaks refer to weight loss. This diet is categorized as restrictive – rich in fats, low in carbohydrates and minimally adequate in proteins³⁸ and was described in the 1920s as a supplementary alternative to the control of epilepsy, especially in the treatment of refractory epilepsy in childhood³⁸⁻⁴¹.

The moon diet evidenced a slightly declining trend punctuated by sporadic RSV peaks, espe-

cially between the 114th and 204th week and the end of 2016 (Figure 2). The moon diet presupposes the influence of the lunar cycle on body fluids and the need to adjust the diet to each phase change – which implies exclusive consumption of juices, soups and liquids for 24 hours in 4 days per month⁴² with the promise of a monthly loss of 4 kg. Also, the stories indicate that you should stop eating when you feel satiated and not consume any food after 6 pm. In the waning phases, practitioners must drink much water to eliminate the toxins⁴³. Anyway, the guidelines are generalized and – which is a common point with others – this is their limitation in meeting individual demands.

The protein diet – although with significant peaks of RSVs around the 44th week (in 2012) shows a decreasing trend curve over the years (Figure 3). As the ketogenic, this restrictive diet modality recommends the semi-unrestricted consumption of foods such as fatty meats, butter and other dairy products, limiting the daily intake of carbohydrates to less than 30g⁴⁴. Weight loss would be related to the thermogenic effect of protein metabolism⁴⁵ and the ketogenic nature of this diet⁴⁴ – derived from the assumptions established in 1970 by Dr. Atkins⁴⁶: emphatic restriction of carbohydrates and recommendation of high protein intake. The stories related to the diet did not show specific descriptions of their composition, but cite their effects and possible variations:

*I lost 11kg with the protein diet. I implemented it strictly for three months until I achieved a weight of 48kg (she's 1.70m tall)*⁴⁷.

*Far less radical than the original created by Dr. Atkins, the high biological value protein diet reduces carbohydrate intake, rather than purely abolishing them, as well as limits fat consumption, rather than free pass...*⁴⁸.

In this case, a variation of the original protein diet (by Dr. Atkins) is shown, in which the preference for proteins of high biological value and less restriction of carbohydrates is recommended, to fight against adverse effects of the traditional diet, such as dizziness, weariness and memory lapses⁴⁸.

Interest in the soup diet (Figure 4) also showed a declining trend line of its cycles of attention after high initial RSVs (more frequent access in 2012, in the 25th week). The reports indicated on the websites indicate that this dietary proposal was elaborated by researchers from the University of São Paulo for patients with heart problems who had to lose weight to perform

Chart 1. News about fad diets posted on national websites between 2012 and 2017.

Fad diets							
Ketogenic diet	Moon diet	Protein diet	Soup diet	Detox diet	Points diet	Dukan diet	Paleo diet
Weeks of greater interest							
19/09/2016 to 25/09/2016	21/11/2015 to 29/11/2015 19/01/2014 to 26/01/2014	04/11/2012 to 10/11/2012	16/06/2012 to 24/06/2012	03/11/2013 to 10/11/2013	01/01/2012 to 08/01/2012	30/12/2013 to 05/01/2014 16/11/2013 to 24/11/2013	25/12/2016 to 01/01/2017
Notícias sobre o tema nos períodos de maior interesse							
CHRIST, Igor. Lutadores de MMA: desafios e riscos de perder peso em pouco tempo: Dietas restritivas em carboidratos, limitada ingestão de água e exercícios feitos em saunas são métodos utilizados por lutadores e que necessitam de muita cautela. 2016. Available from: <http://globoesporte.globo.com/eu-atleta/saude/noticia/2016/09/lutadores-de-mma-arriscam-vida-para-perder-peso-em-poucos-dias.html>. Access on: 10 jan. 2017	G1b. Globo Comunicação e Participações S.A. André Marques sobre cirurgia para emagrecer: “Eu ia morrer”: Três meses e meio depois de fazer uma cirurgia de redução de estômago, o apresentador André Marques se prepara para a volta à TV.. 2014. Available from: <http://globo.com/fantastico/noticia/2014/03/andre-marques-sobre-cirurgia-para-emagrecer-eu-ia-morrer.html>. Access on: 10 jan. 2017	RAMOS, N. R7 Rio. Mesmo magérrima, Bárbara Evans aposta na dieta que a fez perder 11kg: Quando dá uma engordada, modelo apela para a dieta da proteína por uma semana. 2012. Available from: <http://entretenimento.r7.com/receitas-e-dietas/noticias/mesmo-magerrima-barbara-evans-aposta-na-dieta-que-a-fez-perder-11kg-20121109.html?question=0>. Access on: 12 jan. 2017.	D’ALAMA, L. (São Paulo). G1 - Globo Comunicação e Participações S.a. Vendedora paulistana elimina 35 kg após sofrer por câncer da irmã: Descoberta de tumor de mama na família levou Andréia Fiuzu a comer mais. Agora jovem se alimenta bem, caminha e consegue usar roupas de marca.. 2012. Available from: <http://g1.globo.com/bemestar/VC-no-Bem-Estar/noticia/2012/06/vendedora-paulistana-elimina-35-kg-apos-sofrer-por-cancer-da-irma.html?menu=ade251a383e3831>. Access on: 12 jan. 2017.	G1a. Globo Comunicação e Participações S.a. Dieta da desintoxicação limpa nosso organismo e emagrece: Existem vários tipos de dietas desintoxicantes. A detox tradicional é sem lactose, sem glúten e sem proteína animal. Ou seja: nada de leite e derivados.. 2013. Available from: <http://g1.globo.com/globo-reporter/noticia/2013/11/dieta-da-desintoxicacao-limpa-nosso-organismo-e-emagrece.html>. Access on: 13 jan. 2017.	BERGAMO, Giuliana. Veja – Abril Mídia S.A. Vigilantes do Peso: contar calorias é inútil: Maior empresa de dietas do mundo cria novo sistema de pontos que ignora o valor calórico dos alimentos. Frutas são boas. Sucos, um perigo!. 2011. Available from: <http://veja.abril.com.br/saude/vigilantes-do-peso-contar-calorias-e-inutil/>. Access on: 13 jan. 2017.	VIEIRA, Bárbara (São Paulo). Ego - Globo Comunicação e Participações S.A. Depois de perder 19 quilos, Mariana Belém comemora resultado da dieta: Cantora voltou a entrar em um jeans tamanho 38 nesta sexta-feira, 22, mas avisa: ‘Ninguém precisa ser magra para ser bonita.. 2013. Available from: <http://ego.globo.com/famosos/noticia/2013/11/depois-de-perder-14-kg-mariana-belem-comemora-resultado-da-dieta.html>. Access on: 13 jan. 2017.	LUCILIA DINIZ. A verdadeira dieta paleo. Available from: <http://luciliadiniz.com/verdadeira-dieta-paleo/>. Access on: 13 jan. 2017.

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CIVALLI, Luigi. Gil Jung mostra pernões ao cair no samba : Apresentadora se divertiu na quadra da Mocidade Alegre. 2016. Available from: <http://www.ofuxico.com.br/noticias-sobre-famosos/gil-jung-mostra-pernoes-ao-cair-no-samba/2016/09/25-275878.html>. Access on: 10 jan. 2017.	VESTIR E MAQUIAR. Dieta da lua . 2015. Available from: <https://www.vestiremaquiatar.com.br/dieta-da-lua/>. Access on: 10 jan. 2017.	EGO. Tv Cidade Verde. Mais magra, Bárbara Evans faz ensaio . 2012. Available from: <http://cidadeverde.com/noticias/117378/magras-barbara-evans-faz-ensaio>. Access on: 12 jan. 2017.	Notícias sobre o tema nos períodos de maior interesse R7. Insegura com o corpo, Claudia Raia precisou emagrecer para novo trabalho : Aos 46 anos, a atriz procurou a ajuda de uma profissional para afinar. Aprenda a dieta. 2012. Available from: <http://entretenimento.r7.com/receitas-e-dietas/noticias/insegura-com-o-corpo-claudia-raia-precisou-emagrecer-para-novo-trabalho-20120622.html?question=0>. Access on: 12 jan. 2017.	Veja - Abril Mídia S A. Dieta das 500 calorias por dia: perigosa e para poucos: Ator de 'Thor' revelou seguir uma alimentação com poucas calorias para interpretar papel em novo filme. Ele não deve servir de exemplo – esse tipo de regime é indicado para casos específicos e oferece riscos à saúde. 2013. Available from: <http://veja.abril.com.br/saude/dieta-das-500-calorias-por-dia-perigosae-para-poucos/>. Access on: 13 jan. 2017.	VEJA. Abril Mídia S A. Consumo de proteínas deve ser avaliado ao lado do IMC e do peso : Baixo consumo proteico na dieta altamente calórica reduz volume de massa magra geral do corpo – mesmo que a gordura esteja aumentando. 2012. Available from: <http://veja.abril.com.br/saude/consumo-de-proteinas-deve-ser-avaliado-ao-lado-do-imc-e-do-peso/>. Access on: 13 jan. 2017.	EGO (São Paulo). Globo Comunicação e Participações S.a. Se bate um tesão, eu tomo um banho', diz Rita Cadillac na TV : Em entrevista a Marília Gabriela, a ex-chacrete diz que, quando o assunto é sexo, é 'muito bem resolvida sozinha'. 2013. Available from: <http://revistamarieclaire.globo.com/Beleza/noticia/2016/08/dieta-paleolitica-o-que-e-o-que-comer-e-o-que-evitar.html>. Access on: 13 jan. 2017.	MARIE CLAIRE. Editora Globo S/a. Dieta paleolítica: o que é, o que comer e o que evitar : Saiba como funciona o método com alimentos de caça, pesca e plantação. 2016. Available from: <http://revistamarieclaire.globo.com/Beleza/noticia/2016/08/dieta-paleolitica-o-que-e-o-que-comer-e-o-que-evitar.html>. Access on: 13 jan. 2017.

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PORTAL MAIS MÍDIA. Fiu, fiu! Gil Jung ostenta corpão com 3kg a menos. 2016. Available from: <http://www.portalmaismidia.com.br/fiu-fiu-gil-jung-ostenta-corpao-com-3kg-a-menos/>. Access on: 10 jan. 2017	TERRA. Terra Networks Brasil S.a. Madonna segue dieta que promete eliminar 3 kg em 24h, diz fonte. 2014. Available from: <https://saude.terra.com.br/dietas/madonna-segue-dieta-que-promete-eliminar-3-kg-em-24h-diz-fonte-c22bada65bec3410VgnVCM10000098cceb0aRCRD.html>. Access on: 10 jan. 2017.	ALENCAR, M.; BARETTO, L.C., Editora Escala. Dieta de Giovanna Antonelli: Atriz revela sua dieta e o segredo para manter o corpo em forma. 2012. Available from: <http://contamais.com.br/dica-das-famosas/dieta/dieta-de-giovanna-antonelli/10259>. Access on: 10 jan. 2017	ALLEGRETTI, Fernanda; SILVA, Marcela Rodrigues. Revista Marie Claire – Editora Globo. Barriga negativa: o abdômen dos sonhos pode ser conquistado em uma semana - e sem sofrer muito: É só escolher os alimentos e os exercícios certos. Aparelhos hi-tech e novas pílulas também ajudam a secar. 2012. Available from: <http://revistamarieclaire.globo.com/Revista/Common/0,,EMI306799-17595,00-BARRIGA+NEGATIVA+O+ABDOMEN+DOS+SONHOS+PODE+SER+CONQUISTADO+EM+UMA+SEMANA+E+SEM+SOFRER+MUITO,000.html>. Access on: 12 jan. 2017.	CARAS ONLINE. Caras Brasil. Mulher de Márcio Garcia, Andrea Santa Rosa dá dicas de pratos que fazem parte do projeto de reeducação alimentar da dieta detox. 2013. Available from: <http://caras.uol.com.br/bem-estar/mulher-de-marcio-garcia-andrea-santa-rosa-da-dicas-de-pratos-para-o-home-detox#.WKghKzsrLIU>. Access on: 12 jan. 2017.	R7; ZAINAGHI, Ana Luisa. Veja as dicas para emagrecer definitivamente em 2012: Fique com um corpão de dar inveja sem fazer sacrifícios. 2012. Available from: <http://entretimento.r7.com/receitas-e-dietas/noticias/veja-as-dicas-para-emagrecer-definitivamente-em-2012-20120102.html?question=0>. Access on: 12 jan. 2017.	OLIVEIRA, Natália (Rio de Janeiro). Globo Comunicação e Participações S.a. Ceneless auxilia na redução de peso, mas não é uma fórmula milagrosa: Fitoterápico atua na absorção de gorduras e carboidratos pela inclusão de açúcares na matriz da fibra. O ácido ascórbico possui função antioxidante. 2013. Available from: <http://globoesporte.globo.com/eu-atleta/nutricao/noticia/2013/11/ceneless-formula-base-de-fibras-e-vitamina-c-auxilia-reducao-de-peso.html>. Access on: 13 jan. 2017.	UOL NOTÍCIAS. Dieta paleolítica ajuda mulheres na menopausa, diz estudo. 2016. Available from: <https://noticias.uol.com.br/ultimas-noticias/ansa/2016/04/07/dieta-paleolitica-ajuda-mulheres-na-menopausa-diz-estudo.jhtm>. Access on: 13 jan. 2017.

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Ketogenic diet	Moon diet	Protein diet	Soup diet	Detox diet	Points diet	Dukan diet	Paleo diet
<p>“MARIE CLAIRE, Editora Globo. O carboidrato é vilão ou aliado? Dra. Esthela Conde, especialista em nutrição e nossa columnista, fala esta semana sobre carboidratos. 2016. Available from: <http://revistamarieclaire.globo.com/Beleza/noticia/2016/11/gordura-e-vila-ao-aliada.html>. Access on: 10 jan. 2017.</p>	<p>EGO (São Paulo). Globo Comunicação e Participações Paulinha mostra boa forma de biquininho na praia: A loira publicou imagem em seu Instagram e mandou recado: ‘Eu troco mil estrelas pra te dar a lua e tudo que você quiser e se você quiser..’. 2014. Available from: <http://ego.globo.com/biquini/noticia/2014/01/paulinha-leittemostra-baoforma-debiquinho-na-praia.html>. Access on: 10 jan. 2017.</p>	<p>S. REINBERG, R. (New York Times) <i>apud</i> IG. Ig Publicidade e Conteúdo: Ig e Ibest. Feijão e outras leguminosas melhoram a pressão e o diabetes, aponta estudo: Alto teor de fibras seria uma das explicações para o efeito benéfico. Conheça as outras. 2012. Available from: <http://saude.ig.com.br/alimentacao-bemestar/2012-11-08/feijao-e-outras-leguminosas-melhoram-a-pressao-e-o-diabetes-aponta-estudo.html>. Access on: 10 jan. 2017.</p>	<p>VELOSO, Paula. Dúvida recorrente: É preciso saber ouvir cada pessoa e avaliar quais as causas para o seu aumento de peso bem como quais as suas motivações e metas para o perder ou ir perdendo. 2012. Available from: <https://www.educare.pt/opiniao/artigo/ver/?id=11817&langid=1>. Access on: 12 jan. 2017.</p>	<p>GSHOW. Globo Comunicação e Participações S.a. Fernanda Machado e Márcio Garcia são adeptos do suco verde para manter a forma: Atores falam dos benefícios da bebida e dividem suas receitas com os internautas. 2013. Available from: <http://gshow.globo.com/novelas/amor-a-vida/estilo-tv/noticia/2013/11/fernanda-machado-e-marcio-garcia-sao-adeptos-do-suco-verde-para-manter-a-forma.html>. Access on: 12 jan. 2017.</p>	<p>VICARIA, Luciana. Revista época - Editora Globo. Emagrecer usando a internet: Os sites de dieta, aplicativos para celular e redes sociais estão transformando a vida de quem faz regime – em vez de um esforço isolado, emagrecer virou uma atividade de grupo, com resultados melhores. 2012. Available from: <http://revistaepoca.globo.com/vida/noticia/2012/01/emagrecer-usando-internet.html>. Access on: 12 jan. 2017.</p>	<p>TERRA. Terra Networks Brasil S.a. Carne liberada: livro aposta em ‘dieta das cavernas’ para emagrecer: Publicação mostra que refeições baseadas em carne aumentam o nível da dopamina e da serotonina no cérebro. 2014. Available from: <https://saude.terra.com.br/nutricao/carne-liberada-livro-aposta-em-dieta-das-cavernas-para-emagrecer>.e92c8c60ae43410VgnVCM1000098cce0aRCRD.html>. Access on: 13 jan. 2017.</p>	<p>SEVERSON, Kim - The New York Times (Atlanta (EUA)) <i>apud</i> ESTADÃO. Bisão selvagem ou bisão de pasto? Seja como for, a carne está cada vez mais popular nos EUA: O consumo da carne de bisão, animal icônico do estilo americano, tem aumentado. Com isso, dois tipos de consumidores se distinguem: os que querem carne acessível vinda de fazendas tradicionais e os que preferem a orgânica, de rebanhos selvagens. 2016. Available from: <http://paladar.estadao.com.br/noticias/comida,bisao-selvagem-ou-bisao-de-pasto-seja-como-for--a-carne-esta-cada-vez-mais-popular-nos-eua,10000025169>. Access on: 13 jan. 2017.</p>

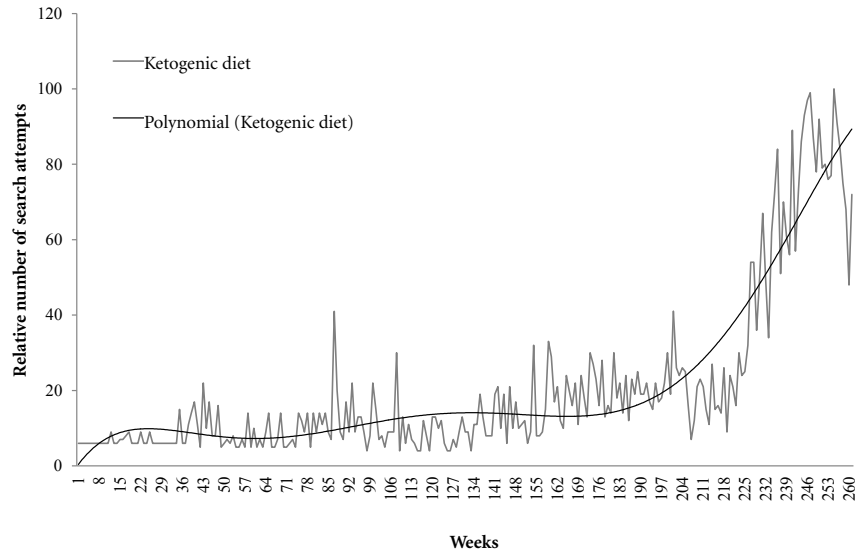


Figure 1. Cycles of attention of the ketogenic diet.

Source: Google Trends, 2017.

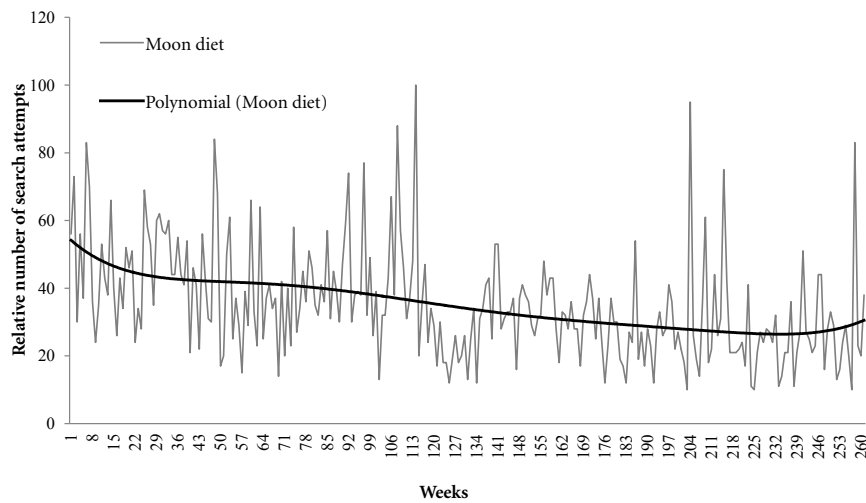


Figure 2. Cycles of attention of the moon diet.

Source: Google Trends, 2017.

surgical procedures⁴⁹. Studies done with Asian and European populations have revealed a relationship between soup consumption and a lower risk of obesity and overweight, suggesting that

this balanced diet provides health benefits^{50,51}. It recommends the intake of soups at least twice a day (mainly lunch and dinner) for a certain period⁴⁹ in which the consumption of some fruits,

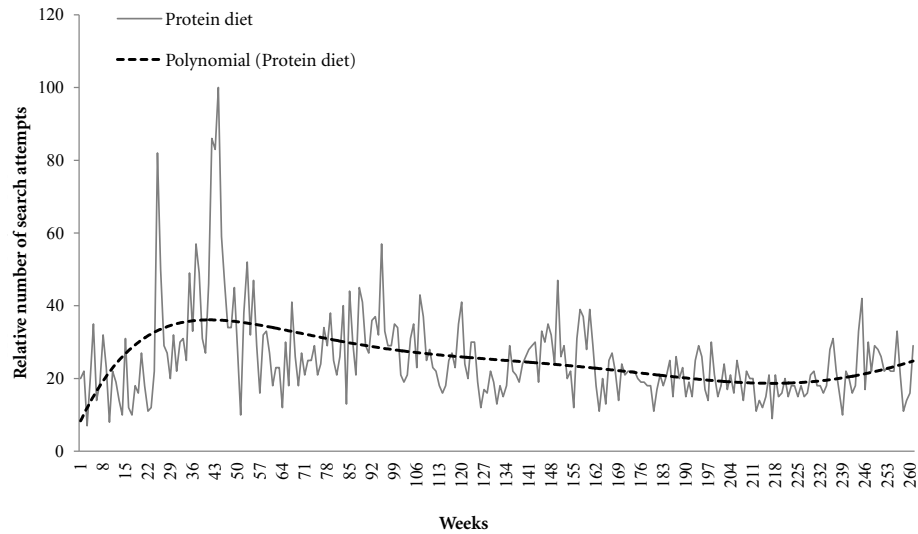


Figure 3. Cycles of attention of the protein diet.

Source: Google Trends, 2017.

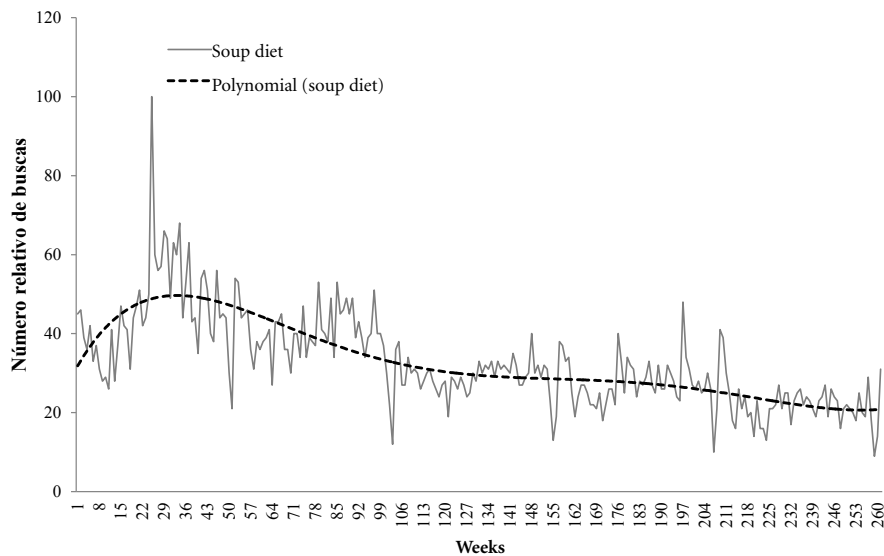


Figure 4. Cycles of attention of the soup diet.

Source: Google Trends, 2017.

vegetables, meats, juices and teas without sugar is acceptable⁴⁹.

Regarding the points diet, lower access with a downward trend curve from significant initial peaks (Figure 5) was observed. This diet does not

restrict the consumption of specific foods or nutrients as long as the daily stipulated daily limit⁵² assigned to each food is not exceeded. One of the definitions available in the virtual environment is as follows: The points diet is well known because

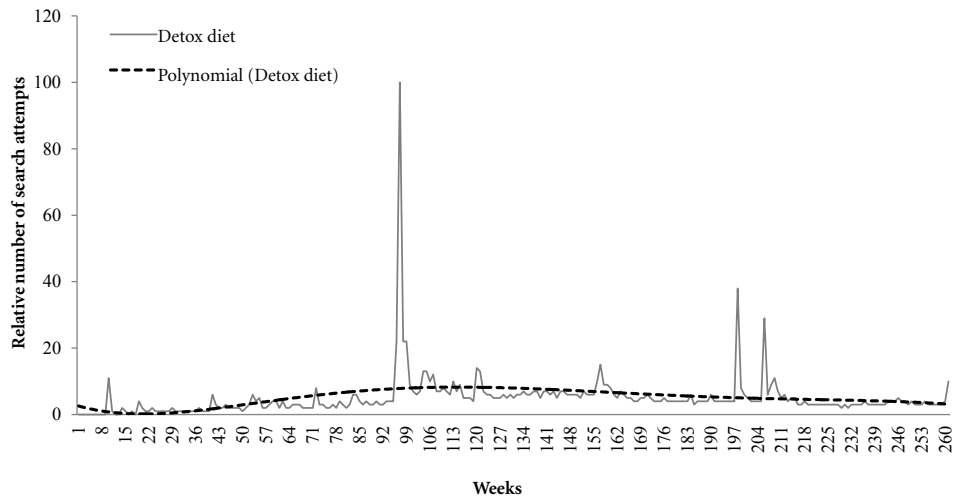


Figure 5. Cycles of attention of the detox diet.

Source: Google Trends, 2017.

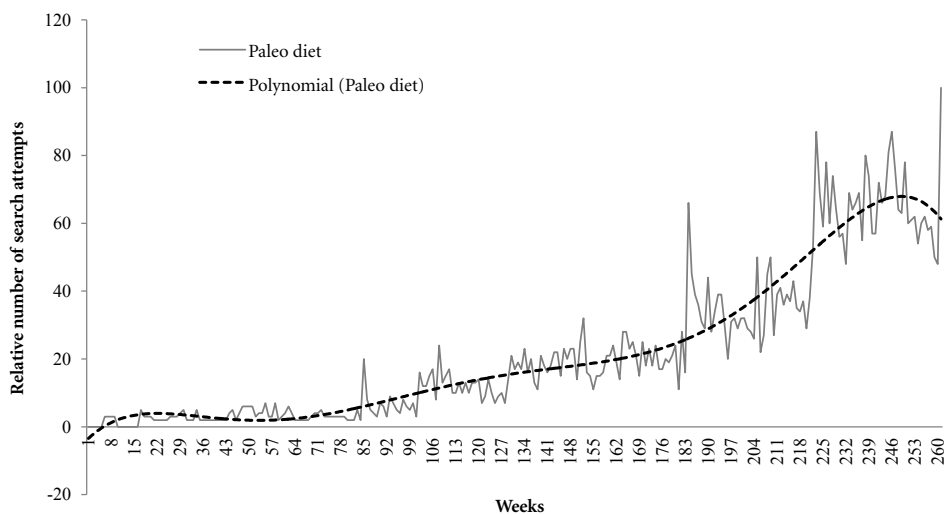


Figure 6. Cycles of attention of the paleo diet.

Source: Google Trends, 2017.

you can eat what you want. For those who are on a diet, knowing that one can do this, wanting to eat and being able to eat is hard to believe. The only thing that is not allowed is eating trans-fat foods⁵³. It is worth noting that, in a study by San-

tana et al.⁵⁴, the points diet was among the most frequently found on the internet.

Unlike the others, the detox diet aroused keen interest in short periods: the most expressive was at the 97th week and two more at the 198th and

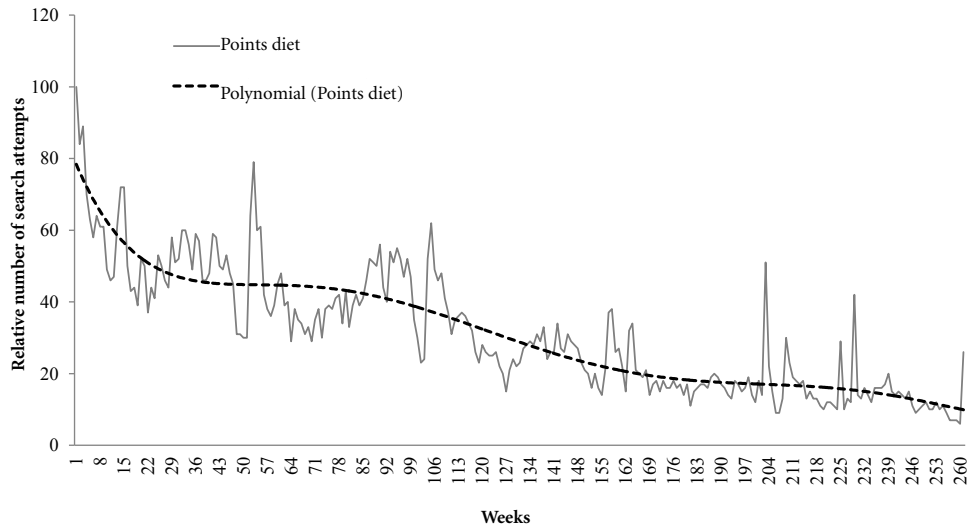


Figura 7. Ciclos de atenção da dieta dos pontos.

Fonte: Google Trends, 2017.

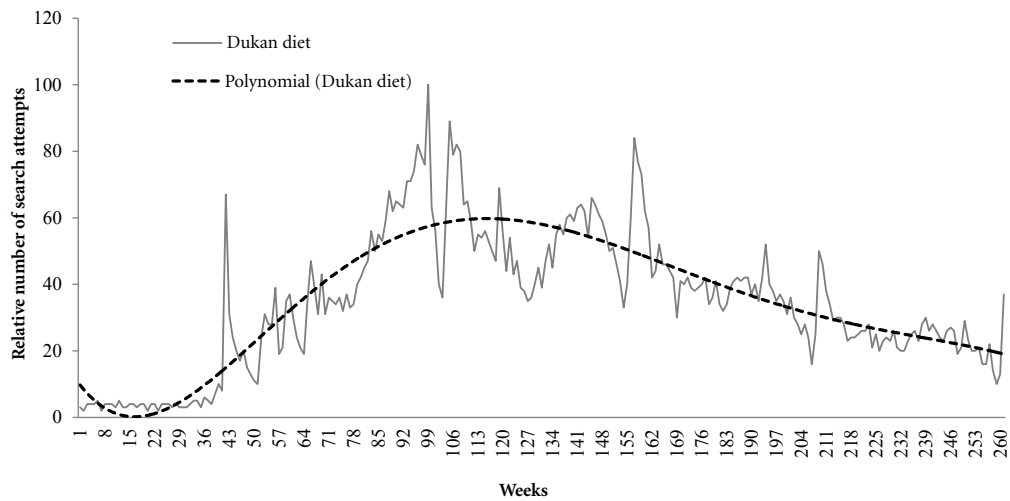


Figure 8. Cycles of attention of the Dukan diet.

Source: Google Trends, 2017.

206th week (Figure 6). Detox diets assume short-term restrictive practices aimed at eliminating toxins from the body for weight loss and health promotion⁵⁵. Detoxification strategies have existed for thousands of years in different cultures

and the guidelines range from absolute fasting diets to juice-based diets⁵⁶.

The Dukan diet, on the other hand, had initially increasing RSV between the 78th and 99th week although, from there, a trend line drop with

short sporadic peaks (Figure 7) is noted. While it has a more procedural characteristic than other fad diets, the Dukan diet also prescribes low amounts of carbohydrates and high protein value^{57,58}. It originated from the Dukan method that was proposed by nutrologist doctor Pierre Dukan from studies carried out in the last 40 years⁵⁹. It is based on four phases. The first phase (attack) lasts from 3 to 7 days and consumes only proteins – without quantitative restriction. There is a recommended intake of 2 liters of water and 20 minutes of walking. In phase 2 (cruise), besides recommendations of phase 1, one adds vegetables to the menu and a 30-minute walk is recommended. Phase 3 (consolidation) lasts days, and one is allowed to consume protein, vegetables, two fruits per day, two slices of whole grain bread, 40g of cheese, two weekly servings of carbohydrates, such as pasta, and two weekly gala meals, with one starter, one main course, a dessert and a drink [...] is allowed every 25-minute walk⁶⁰). Phase 4 (stabilization) should be continuous – lasts for the rest of one's life and one can normally eat – as long as three rules are observed: consuming only protein on Thursdays; doing at least a 20-minute walk daily and use stairs instead of elevators and consume three tablespoons of oat bran⁶⁰.

In the aforementioned definition, especially since it appears as a ritual with prospects of life-long continuity, the Dukan diet seems to be approaching the presuppositions of dietary re-education. Also, it has a clear association of the diet with the prescription of regular physical activity – a combination considered as pillars for the construction of the idealized body, as observed by Santos⁵.

The paleo diet has been the subject of increasing search attempts in the last years of 2016 with a peak of interest in the last week of the series (Figure 8). The Paleolithic diet is a reference to the diet model of modern men, prescribing a nutritional standard based on plants and wild animals consumed over 10,000 years ago⁶¹. In this case, there would be no restriction related to the proportion of macronutrients, for example, but to the type of food. It is recommended to avoid foods that were not consumed by our ancestors, such as cereals (wheat, rice, rye, oats, and so forth); legumes (beans, grains, lentils, and so forth); dairy products: (milk, yogurt, cheese, cream); fats: (vegetable oil and margarine) and processed products⁶².

Contradicting some scientific statements that affirm the unhealthiness of fad diets, especially

because of their restrictive nature^{63,64}, the Paleolithic diet is cited in one of the stories as a protective factor for some diseases:

The Paleolithic diet can bring long-term benefits in obesity-related problems, including reducing the risk of diabetes and cardiovascular diseases, explains study author Caroline Blomquist, of the University of Umea, Sweden⁶⁵.

The main restriction is the intake of processed foods, which, according to the Food Guide for the Brazilian Population⁶⁶, should have limited consumption, emphasizing the preference for fresh or minimally processed foods. However, the story reinforces the controlling character of diets with the total ban of a particular food group while bringing the idea of continuity of such a long-term diet in order to achieve its benefits.

Diets as risk, dietary re-education as creed and celebrities

Unlike dietary management as a recommended therapeutic procedure based on scientific evidence that legitimizes it and, in some way, institutionalizes the decision-making about the pertinence of its uses, the choice for fad diets usually takes on a private nature and is an individual responsibility.

Thus, with the problem set, the consumer would have to decide on the weights of risks and their rewards –living... and managing risks⁶⁷; as a price required to follow the contemporary values of society (risk, show, control, networks, information, and so forth), the consumer always assumes provisional decisions, pending new information on new and emerging diets. As described by Giddens, in reflexive modernity, social practices are constantly examined and reformed in the light of renewed data about these very practices, thereby altering their nature⁶⁸).

Despite the efforts to minimize the risks, these are inherent to the restrictive diets seen in the virtual environment. In general, with different designs, fad diets refer to the need for diet self-control – or self-interdiction – as a way of building the body desired and saturated with images of celebrities who show them as a result of their experiences.

In the last decades, body dissatisfaction seems to have increased exponentially, especially among women who adhere blindly to restrictive food abstinence⁶⁹, self-control mechanisms immersed in a setting in which dietary and body marketing discourses exert an intense influence on construction (sometimes, paradoxically, producing

destruction) of the subjects' identity⁶⁹. In addition to the body's physical form, a healthy diet should contribute to the symbolic construction of the subjects' well-being with themselves –, social acceptance and the construction of happiness itself⁶ are sought in the reflexive construction of the body; however, healthy eating concepts often assume normative, essentially energetic-quantitative aspects.

Authors^{70,71} point out that understanding the interfaces between food and health requires the analysis of political, socio-cultural and nutritional realms that may even diverge on what is considered good or not for the body. However, in modernity, nutritional rationality is highlighted in the elaboration of definitions of healthy eating, although related practices are more distant from the world of life⁷².

As an essential imperative to asceticism to achieve the ideal body, the idea of a diet as part of a temporary ritual finds its contrast with the perennial creed in dietary re-education – which is vaguely found in statements about the Dukan diet and detox diet.

The detox is implemented for a certain period, which is followed by dietary re-education [...] Several types of detox diets are available. The traditional detox is lactose-free, gluten-free and animal protein-free. That is, no milk and dairy products, no food based on wheat flour, barley, oats, and no meat whatsoever.

Regarding the moon diet, Google News[®] pointed out the story: *André Marques sobre cirurgia para emagrecer: Eu ia morrer* (Free translation: *André Marques on weight loss surgery: I was going to die*)⁷⁴. In the interview, the host lists his unsuccessful attempts (including the moon diet) at losing weight before undergoing bariatric surgery. [...] *I had tried all the methods you can think of. Orthomolecular diet, moon diet, a glass of water under the sink. I took all the medications that you can think of*⁴. However, in some of the stories on the moon diet, nutritionists' opinions are dismissed as a paradox: *Unfortunately, the moon diet is not approved by scientists and nutritionists, but remains an effective and healthy method*⁴².

As already mentioned, stories – especially those that encourage adherence to dietary rites, or the consumption of products or foods – often refer to celebrities in their titles. The experience of the cultural icons of the perfect body is often conjured. Of the 32 news items selected, only 12 did not refer directly to the diets of models, actors, actresses, hosts, sportsmen or former participants of reality shows. Although the dissemination of health information

through celebrities is not necessarily detrimental, one should consider other variables. According to Rayner⁷⁵, several Australian celebrities get media attention because of personal experiences related to the conditions of they had been victims. In this context, they also manage to catch the attention by taking on concerns about the prevention of ills – and seize the opportunity to market products enhanced by the celebrity status. In general, the contribution of celebrities in this field is discussed in the scientific setting, especially in the field of public interventions for disease prevention⁷⁶. The participation of famous people associated with product marketing is far from being considered a health promoter because it ends up referring to the consumption incentive⁷⁷. We notice that the content of the stories presented to the search process is related to the aesthetics referring to reductionist and medicalized health conceptions – focused on biological aspects.

In the contents directed to health promotion, one perceives the more significant presence of professional opinions and results of scientific studies. In this respect, it is worth reflecting on professional action, since professionals themselves can foster the consumption of health information and services, which, depending on their level of involvement in daily practices, may characterize medicalization⁷⁸ – a process in which issues that are not necessarily medical problems are treated as such, usually interpreted as diseases or disorders⁷⁸.

In the field of Food and Nutrition, this idea can be translated by the aforementioned nutritional rationality⁷⁹: dietary practices attentive to the permanent care in maintaining the balance of nutrients in food to the detriment of the pleasure of eating and the values with which the food marks the social interaction associated with it. Viana et al.⁷⁹ place the nutritionist's role as a medicalizer when the sphere of prevention is sidelined to give way to strict dietary interventions – always supported by the media – that convert the risk into quasi-disease in the administration of daily living through health standards.

In some stories, the realm of food dangers is sensationalistically conjured. It also allows us to observe what is understood by some authors as commoditization of science⁸⁰, a process by which scientific knowledge, in the midst of power plays, is used in favor of market interests. While at the service of a capitalist perspective, science would be geared to the development of products that meet the consumption needs⁷⁹ of social groups, and these needs are often built from economic

marketing strategies in which food products can be easily observed.

Final considerations

Google Trends has proved to be a relevant tool in the analysis of interests on health issues and an alternative for researching the vast field of studies that is the Internet.

Expert opinion and celebrity exposure is reified by fad diets, which assume similarities and differences from which they swing in the vast symbolic market of healthy eating. The novelties – whether in the form of differentiated regimens, changes in meal intervals, or changes in dietary

balance – add symbolic value effectively in arousing the interest of Internet users for healthy, fast weight-loss diets. The consumption of this type of information well reflects values central to the liquid society described by Bauman⁸¹, based on consumerism and the incessant and uncontrollable need to generate and supply desires. It reveals the immediacy of consumers in search of the ephemeral in the midst of the marketing cycles applied by digital marketing, such as dietary AIDAs (Attention, Interest, Desire, Action), whose products will guide new search attempts and new desires in a succeeding generation.

Further studies are required to investigate consumers' repercussions of this information consumption on their daily lives and eating practices.

Collaborations

JA Passos: Participated in all stages of preparing the manuscript, from the conception of the study design, interpretation and data analysis to the final review. PR Vasconcellos-Silva: Participated in the design of the study design of the manuscript, in the critical analysis and in the final review. LAS Santos: Participated in the critical analysis and final review of the manuscript.

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