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**Expectativa do consumidor de bebida funcional não alcoólica e
percepção de alimentos funcionais**

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Coorientadora: Prof^a. Dr^a. Camila Pinelli

ARARAQUARA - SP

2014

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percepção de alimentos funcionais**

Tese apresentada ao Programa de Pós-graduação em Ciência dos Alimentos da Faculdade de Ciências Farmacêuticas da Universidade Estadual Paulista “Júlio de Mesquita Filho”, como parte dos requisitos para obtenção do título de Doutora em Ciência dos Alimentos

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Dedico este trabalho

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(Chico Xavier)

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RESUMO

Este trabalho teve como objetivo avaliar e interpretar a expectativa do consumidor de bebida funcional não alcoólica no Brasil e em Portugal usando a técnica do Discurso do Sujeito Coletivo (DSC). Foram reunidas informações sobre as técnicas qualitativas mais utilizadas para avaliar e compreender a atitude e o comportamento do consumidor de alimentos e bebidas, incluindo a técnica quali-quantitativa denominada Discurso do Sujeito Coletivo. Foi também realizado um estudo *cross-cultural* para avaliar o hábito de consumo de bebidas não alcoólicas de praticantes de atividade física no Brasil e em Portugal. Indivíduos frequentadores de academias de ginástica voluntariamente responderam a questionário estruturado contendo questões sobre dados sócio-demográficos e hábito de consumo de bebidas não alcoólicas. Esta etapa do trabalho foi realizada com o objetivo de identificar consumidores de bebidas não alcoólicas e recrutar indivíduos para posterior entrevista usando a técnica do DSC. Para avaliar a percepção dos consumidores de bebidas não alcoólicas sobre alimentos funcionais inicialmente foram estabelecidos critérios para aplicar o DSC e realizadas entrevistas individuais semi-estruturadas. Para avaliar a expectativa do consumidor de bebida funcional não alcoólica os participantes foram estimulados a expor suas expectativas em relação ao tipo de bebida, à aparência, cor, sabor, textura, benefícios à saúde e informação do rótulo, imaginando que fossem desenvolver um produto e lançá-lo no mercado. O DSC foi avaliado segundo as idéias-centrais (ICs), as expressões-chave (ECHs) e o discurso. Dentre as técnicas qualitativas usadas para avaliar o comportamento do consumidor, a técnica do DSC se destaca por utilizar uma abordagem quali-quantitativa, permitindo avaliar a necessidade, percepção, preferência, atitude e decisão dos consumidores. O perfil dos praticantes de atividade física em academias de ginástica no Brasil e em Portugal era distinto. A maioria dos participantes tinha idade entre 20 e 40 anos, com predominância de homens entre os portugueses e de mulheres entre os brasileiros. O alto consumo de suco de fruta e néctar dos brasileiros e de chá pronto para beber dos portugueses, mais de quatro vezes por semana, indicou o interesse dos praticantes de atividade física em academias de ginástica por bebidas que favoreçam a saúde e qualidade de vida. Os critérios para aplicar o DSC envolveram a faixa etária dos indivíduos e o quanto gostavam e consumiam bebidas não alcoólicas. Foram excluídos os indivíduos com doença relacionada à alimentação. Os entrevistados relataram que os alimentos funcionais têm propriedades e funções específicas capazes de promover benefícios à saúde, devendo ser consumidos diariamente em determinada quantidade para que os efeitos à saúde sejam alcançados. A expectativa dos consumidores por bebida funcional não alcoólica esteve relacionada a bebidas com mistura de frutas cítricas,

bebida energética de fruta, isotônico de fruta com soja e chá de fruta pronto para beber. O sabor característico de fruta, cítrico, ácido, refrescante, doce, mas com pouco açúcar, com aroma natural característico de fruta e refrescante, com textura fina, não encorpada, com aparência translúcida e cor característica da fruta, foram as características relatadas pelos entrevistados para indicar sua expectativa por bebida de fruta, natural, sem adição de açúcar e espessante. Os entrevistados também esperam que as bebidas ofereçam disposição, energia e bem-estar, que sejam ricas em vitaminas, minerais e antioxidantes e que tenham baixo valor calórico, baixo teor de sódio e de açúcar. O interesse por bebidas que ofereçam benefícios à saúde como auxiliar no funcionamento intestinal, na redução do colesterol, na prevenção da osteoporose e da aterosclerose foi relatado por todos os entrevistados. As informações dos rótulos mais importantes para chamar a atenção dos consumidores de bebidas não alcoólicas foram os ingredientes da bebida, informação nutricional, valor calórico, teor de sódio, açúcar, vitaminas, minerais e aditivos. A técnica do DSC foi pioneiramente utilizada para avaliar a expectativa do consumidor de bebida funcional não alcoólica. Este estudo amplia consideravelmente a compreensão do consumidor de bebidas não alcoólicas no Brasil e em Portugal e fornece um instrumento útil que poderá subsidiar novas oportunidades de mercado direcionadas ao desenvolvimento de produtos saudáveis, naturais, que contribuam para a saúde do consumidor e atendam às suas necessidades.

Palavras-chave: Expectativa do consumidor, Discurso do Sujeito Coletivo, Bebida funcional, Bebida não alcoólica, Benefícios à saúde.

ABSTRACT

This study evaluates and interprets consumer expectation of non-alcoholic functional beverage in Brazil and Portugal using the Discourse of the Collective Subject (DCS) technique. Information about the qualitative techniques most commonly used was pooled to evaluate and understand the attitude and behavior of the consumer of food and beverages, including the qualitative technique the Discourse of the Collective Subject. A cross-cultural study was also performed to evaluate the consumption of non-alcoholic beverages of physical activity practitioners in Brazil and Portugal. Practitioners of physical activity from fitness centers voluntarily responded to a structured questionnaire which addressed socio-demographic data and habit of consumption of non-alcoholic beverages. This stage of the work was performed in order to identify consumers of non-alcoholic beverages and recruit individuals for subsequent interview using the DCS technique. Initially, after establishing the criteria to apply the DCS, semi-structured interviews were performed to evaluate the perception of non-alcoholic beverages consumers of functional food. To evaluate consumer expectation of non-alcoholic functional beverages, the participants were encouraged to express their expectations regarding beverage characteristics such as kind, color, flavor, texture, appearance, health benefits, and labeling information, imagining that they would develop and launch a product on the market. The DCS was evaluated according to the central ideas (CIs), key expressions (KEs) and discourse. Among the qualitative techniques used to assess consumer behavior, the DCS technique stands out by using qualitative and quantitative approach in order to evaluate the need, perception, preference, attitude and decision of consumers. The profile of physical activity practitioners in fitness centers in Brazil and Portugal was distinct. The majority of participants were 20 to 40 years old, predominantly men among the Portuguese and women among the Brazilians. The high consumption of fruit juice and nectar among the Brazilians and ready to drink tea among the Portuguese, more than four times a week, indicated the interest of practitioners of physical activity in fitness centers for beverages that favor health and quality of life. The criteria for applying the DCS involved age category and how much the individuals liked and consumed non-alcoholic beverages. Individuals who had nutrition or food-related diseases were excluded. The participants stated that functional food has properties and specific functions that promote health benefits. They stated that functional food should be consumed daily in specific quantities in order to achieve health benefit effects. The consumer expectation of non-alcoholic functional beverage consists of a juice with a blend of citrus fruits, fruit energy drink, fruit isotonic with soy and RTD fruit tea. The characteristic fruit flavor, citric, acid,

refreshing, sweet, with little sugar; characteristic fruit aroma, natural and refreshing; liquid texture; translucent appearance and color characteristic of fruit were the characteristics desired by the participants. The expectation seemed to be related to fruit juice, natural, with no added sugar and thickener. Participants also expect the beverages to improve their willingness, energy and well-being; to be rich in vitamins, minerals and antioxidants and low in calories, sodium and sugar. All participants expressed interest in beverages that offer health benefits such as assisting the bowel function, reducing cholesterol, preventing osteoporosis and atherosclerosis. The most important information on the labels, capable of drawing consumers attention to the beverage were ingredients, nutritional information, calorie content, sodium, sugar, vitamins, minerals and additives. The DCS technique was used for the first time to assess consumer expectation of non-alcoholic functional beverage. This study considerably improves the understanding about the consumer of non-alcoholic functional beverages in Brazil and Portugal, and provides a useful tool that can support new market opportunities directed to healthy and natural products that contribute to the health of consumers and meet their needs.

Keywords: Consumer expectation, Discourse of the Collective Subject, Functional beverage, Non-alcoholic beverage, Health benefits.

INTRODUÇÃO

INTRODUÇÃO

O consumo mundial de bebidas não alcoólicas industrializadas apresentou crescimento de 3,6% entre 2003 e 2009. A produção passou de 1.310 para 1.611 bilhões de litros no período. Só em 2009 o consumo de bebidas não alcoólicas à base de fruta cresceu 5,3%, seguindo a tendência de consumo de bebidas que oferecem saúde, conveniência, sabor, inovação e prazer. As vendas mundiais de bebidas não alcoólicas são de aproximadamente US\$ 500 bilhões por ano e podem chegar a mais de US\$ 600 bilhões até 2015 (MARKET RESEARCH, 2014; CARVALHO, 2010; FERRAREZI; DOS SANTOS; MONTEIRO, 2010; DE MARCHI, 2001).

No Brasil, o mercado de bebidas não alcoólicas também apresentou crescimento nos últimos anos, indo de 47 para 59 bilhões de litros entre 2005 e 2010. A participação no mercado nacional foi de 51,6% para 53,2% entre todas as bebidas vendidas no período. Nos últimos cinco anos o consumo *per capita* cresceu 3,5%, passando de 168,4 litros em 2005 para 206,7 litros em 2010 (ABIR, 2014). Em Portugal, as bebidas não alcoólicas representaram cerca de 48,0% do total de bebidas comercializadas no país em 2012, num total de 2.136 milhões de litros. O consumo *per capita* foi de 198,2 litros, no mesmo período (PROBEB, 2014b). O segmento de bebidas não alcoólicas representa cerca de 5% do volume de negócios da indústria agro-alimentar portuguesa, com faturamento de €550 milhões em 2009 (PROBEB, 2014a).

O constante crescimento do setor de bebidas não alcoólicas, baseado tanto no aumento do volume de produção quanto no aumento do consumo *per capita*, tem despertado o interesse da indústria de bebidas para a produção de novos tipos de produtos. As indústrias têm buscado novos nichos de mercado visando aumentar a oferta de novos produtos e sabores, além de melhorar sua qualidade e popularizar seu consumo. O mercado de bebidas não alcoólicas à base de frutas está crescendo em todo o mundo devido à preferência dos consumidores por bebidas saudáveis. Este mercado vive um momento de grande competição, exigindo inovações constantes, focadas no consumidor (FERRAREZI *et al.*, 2013; DE MARCHI, 2006; DE

MARCHI, 2001).

O crescimento do mercado mundial de alimentos funcionais reflete a tendência de consumo de alimentos inovadores que estão associados com a demanda por alimentos saudáveis que promovem benefícios à saúde. O maior mercado de alimentos funcionais se concentra nos Estados Unidos, seguido pela Europa e Japão. Juntos, esses países contribuem com mais de 90,0% do total de vendas de alimentos funcionais no mundo. As vendas mundiais de alimentos funcionais deverão atingir US\$ 1,74 trilhões em 2015. Só nos Estados Unidos as vendas foram estimadas em US\$ 38 bilhões no ano de 2011. No Brasil, estes novos produtos responderam por pelo menos US\$ 10 bilhões em 2011. A estimativa é que essa categoria represente 20,0% do mercado nacional de alimentos e bebidas em 2020 (SLOAN, 2012; VITAFOODS SOUTH AMERICA, 2014).

O termo alimento funcional surgiu no Japão em meados da década de 80, no intuito de reduzir os custos com saúde e medicamentos, principalmente em relação à população idosa. Denominados como FOSHU (*Foods for Specific Health Use*), os alimentos funcionais foram definidos no Japão como alimentos compostos por ingredientes funcionais que afetam uma estrutura ou função do organismo, utilizados para manter ou regular uma condição específica de saúde (COSTA; ROSA, 2010; AMERICAN DIETETIC ASSOCIATION - ADA, 2009).

A demanda dos consumidores por produtos funcionais têm aumentado como consequência da busca por um estilo de vida mais saudável. As principais tendências do mercado estão voltadas para saúde, bem-estar e nutrição dos consumidores. Em relação às bebidas funcionais as tendências estão voltadas à redução dos níveis de colesterol, de açúcar, do risco de doenças cardiovasculares e da pressão arterial, aos compostos bioativos com atividade antioxidante, à vitamina D e cálcio para prevenção da osteoporose, aos prebióticos e probióticos para aumento da imunidade e equilíbrio da flora intestinal, ao ômega-3 visando o controle de inflamações, ao sódio, potássio, fosfato e magnésio para reposição de eletrólitos e aos aminoácidos para redução da fadiga muscular, etc, além de bebidas voltadas as necessidades de

populações específicas, como esportistas, idosos, crianças e mulheres (FERRAREZI; PINELLI; MONTEIRO, 2014; SLOAN, 2012; BLEIEL, 2010; SIRÓ *et al.*, 2008; SIEGRIST; STAMPFLI; KASTENHOLZ, 2008). O mercado de bebidas funcionais não alcoólicas, em especial à base de fruta, apresenta grande potencial de crescimento.

A influência da atitude, crença, expectativa e opinião na escolha e na compra do alimento é particularmente importante na aceitação ou rejeição de alimentos e bebidas. O processo pelo qual os consumidores aceitam ou rejeitam os alimentos é influenciado por vários aspectos como marca, preço, embalagem, características sensoriais incluindo cor, aroma, sabor, textura, etc, e também por aspectos sócio-culturais, biológicos e psicológicos. Esse processo é muito dinâmico e varia não apenas sob a influência dos indivíduos de um mesmo grupo, mas também entre os mesmos indivíduos em diferentes contextos e períodos de tempo (FERRAREZI *et al.*, 2013; IOP; TEIXEIRA; DELIZA, 2006; JAEGER, 2006).

Para investigar atitudes, crenças, expectativas e opiniões dos consumidores de alimentos e bebidas, têm sido utilizadas pesquisas qualitativas. A pesquisa qualitativa tem caráter exploratório e gera informações descritivas, capazes de identificar o comportamento do consumidor (MINAYO, 2010). Essa pesquisa têm como objetivo compreender como e porquê determinados fatores afetam a decisão de compra e consumo de produtos, incluindo alimentos e bebidas. A pesquisa qualitativa vem sendo cada vez mais empregada em pesquisas de mercado, *marketing* e desenvolvimento de produtos (FERRAREZI; MONTEIRO, 2014; MALHOTRA, 2006; BARRIOS; COSTELL, 2004). A entrevista individual em profundidade (*in-depth interview*) e as discussões em grupo (*focus group*) são as técnicas mais utilizadas em pesquisas com consumidor de alimentos (FERRAREZI; MONTEIRO, 2014; BARRIOS; COSTELL, 2004). Entretanto, poucos trabalhos têm sido realizados para avaliar a expectativa do consumidor de bebidas não alcoólicas. Apesar da importância econômica e tecnológica que as bebidas não alcoólicas, especialmente à base de frutas, representam atualmente, existe pouca informação na literatura sobre a expectativa do consumidor para tal produto. Os trabalhos têm

focado no consumo de bebidas não alcoólicas adicionadas de açúcar e suas implicações na saúde (HEDRICK *et al.*, 2013; HAN; POWELL, 2013; DE KONING *et al.*, 2011).

O discurso do sujeito coletivo (DSC) emprega uma abordagem quali quantitativa reunindo opiniões, percepções, preferências, atitudes e decisões dos participantes num discurso. O DSC permite identificar, interpretar e avaliar opiniões, desejos, crenças, atitudes, necessidades, motivos e comportamentos de uma população. A pesquisa preserva a natureza discursiva e qualitativa da opinião do começo ao fim e torna inseparável a dimensão quantitativa associada à representatividade e generalização dos resultados, representando um avanço na qualidade de pesquisas de opinião (LEFÈVRE; LEFÈVRE, 2010; LEFÈVRE; LEFÈVRE; MARQUES, 2009; LEFÈVRE; LEFÈVRE, 2003). Poucos trabalhos utilizaram a técnica do DSC como ferramenta para avaliar a expectativa do consumidor de alimentos e bebidas.

O mercado de alimentos e bebidas tem sido estimulado pelas exigências dos consumidores, que estão cada vez melhor informados sobre a importância de uma alimentação saudável. Estudar o comportamento do consumidor é fundamental para auxiliar as empresas a compreenderem as expectativas dos consumidores, criando novas oportunidades de mercado que atendam às suas necessidades (KANTAR WORLDPANEL, 2013). Conhecer as atitudes, motivações e expectativas dos consumidores de bebidas não alcoólicas, no Brasil e em Portugal, enriquece a compreensão do comportamento do consumidor e pode dar suporte à indústria para o desenvolvimento de produtos.

Este trabalho teve como objetivo avaliar e interpretar a expectativa do consumidor de bebida funcional não alcoólica no Brasil e em Portugal usando a técnica do Discurso do Sujeito Coletivo (DSC) e está dividido em quatro Capítulos. O Capítulo 1 reuniu informações sobre as técnicas qualitativas mais utilizadas para avaliar e compreender a atitude e o comportamento do consumidor de alimentos e bebidas incluindo a técnica quali quantitativa denominada Discurso do Sujeito Coletivo, ainda pouco utilizada em estudos do comportamento do consumidor. O Capítulo 2 apresenta um estudo *cross-cultural* para avaliar o hábito de consumo de bebidas não

alcoólicas de praticantes de atividade física em academias de ginástica no Brasil e em Portugal. No Capítulo 3 foram estabelecidos os critérios utilizados para aplicar o DSC e avaliar a percepção de consumidores de bebidas não alcoólicas sobre alimentos funcionais no Brasil e em Portugal. Finalmente, o Capítulo 4 trata da avaliação e interpretação da expectativa do consumidor de bebida funcional não alcoólica, utilizando o DSC.

Referências

- ABIR – Associação Brasileira das Indústrias de Refrigerantes e Bebidas não alcoólicas. **Consumo de todas as bebidas comerciais 2005-2010**. Disponível em: <<http://abir.org.br/2011/10/24/dados-de-mercado-2011/>>. Acesso em: 14 mar. 2014.
- AMERICAN DIETETIC ASSOCIATION – ADA. Position of the American Dietetic Association: Functional Foods. **Journal of the American Dietetic Association**. v. 109, n. 4, p. 735-746, 2009.
- BARRIOS, E.X.; COSTELL, E. Review: Use of methods of research into consumers' opinions and attitudes in food research. **Food Science and Technology International**. v. 10, n. 6, p. 359-371, 2004.
- BLEIEL, J. Functional foods from the perspective of the consumer: How to make it a success? **International Dairy Journal**. v. 20, p. 303-306, 2010.
- CARVALHO, A. **Mercado Global de Bebidas 2010**. Tetra Pak. (2010). Disponível em: <<http://www.valoronline.com.br/sites/default/files/alexandre.pdf>>. Acesso em: 08 jan. 2011.
- COSTA, N.M.B.; ROSA, C.O.B. **Alimentos funcionais: componentes bioativos e efeitos fisiológicos**. Rio de Janeiro: Editora Rubio, 2010. 536p.
- DE KONING, L.; MALIK, V.S.; RIMM, E.B.; WILLET, W.C.; HU, F.B. Sugar-sweetened and artificially sweetened beverage consumption and risk of type 2 diabetes in men. **The American Journal of Clinical Nutrition**. v. 93, p. 1321-1327, 2011.
- DE MARCHI, R. **Bebida de maracujá natural “light” pronta para beber: formulação, produção e estudo de vida-de-prateleira**. 2006. 206 p. Tese (Doutorado) - Faculdade de Engenharia de Alimentos, Universidade Estadual de Campinas, Campinas.
- DE MARCHI, R. **Desenvolvimento de uma bebida à base de maracujá (*Passiflora edulis Sims. F. flavicarpa Deg.*) com propriedades de reposição hidrolítica**. 2001. 92 p. Dissertação (Mestrado) – Faculdade de Ciências Farmacêuticas, Universidade Estadual Paulista “Julio de Mesquita Filho”, Araraquara.
- FERRAREZI, A.C.; DOS SANTOS, K.O.; MONTEIRO, M. Critical assessment of the Brazilian regulations on fruit juices, with emphasis on ready-to-drink fruit juice. **Brazilian Journal of Nutrition**. v. 23, p. 667–677, 2010.
- FERRAREZI, A.C.; MINIM, V.P.R.; DOS SANTOS, K.O.; MONTEIRO, M. Consumer attitude towards purchasing intent for ready to drink orange juice and nectar. **Nutrition and Food Science**. v. 43, n. 4, p. 304-312, 2013.
- FERRAREZI, A.C.; MONTEIRO, M. Consumer perception of functional foods in Brazil and Portugal. **Public Understanding of Science**. 2014. [Submetido].
- FERRAREZI, A.C.; PINELLI, C.; MONTEIRO, M. Consumer expectation of non-alcoholic functional beverage. **Journal of Nutrition Education and Behavior**. 2014. [A ser

submetido].

HAN, E.; POWELL, L.M. Consumption patterns of sugar-sweetened beverages in the United States. **Journal of the academy of nutrition and dietetics**. v. 113, n. 1, p. 43-53, 2013.

HEDRICK, V.E.; COMBER, D.L.; FERGUSON, K.E.; ESTRABOOKS, P.A.; SAVLA, J.; DIETRICH, A.M.; SERRANO, E.; DAVY, B.M. A rapid beverage intake questionnaire can detect changes in beverage intake. **Eating behaviors**. v. 14, p. 90-94, 2013.

IOP, S.C.F.; TEIXEIRA, E.; DELIZA, R. Consumer research: extrinsic variables in food studies. **British Food Journal**. v. 108, n. 11, p. 894-903, 2006.

JAEGER, S. Non-sensory factors in sensory science research. **Food Quality and Preference**. v. 17, p. 132-144, 2006.

KANTAR WORLDPANEL. **As tendências de consumo no primeiro trimestre do ano**. Disponível em: <<http://www.kantarworldpanel.com/pt/press-releases/Press-release>>. Acesso em: 20 jul. 2013.

LEFÈVRE, F.; LEFÈVRE, A.M.C. **O discurso do sujeito coletivo**. Um novo enfoque em pesquisa qualitativa (Desdobramentos). Caxias do Sul: Educs, 2003.

LEFÈVRE, F.; LEFÈVRE, A.M.C. **Pesquisa de representação social**. Um enfoque qualiquantitativo. Brasília: Liber Livros, 2010.

LEFÈVRE, F.; LEFÈVRE, A.M.C.; MARQUES, M.C.C. Discourse of the collective subject, complexity and self-organization. **Ciência & Saúde Coletiva**. v. 14, n. 4, p. 1193-1204, 2009.

MALHOTRA, N.K. 2006. Concepção de Pesquisa exploratória: Pesquisa qualitativa. In: MALHOTRA, N.K. (Ed.), **Pesquisa de marketing: uma orientação aplicada**. Porto Alegre: Bookman. 4 ed., p. 152-79, 2006.

MARKET RESEARCH. **Nonalcoholic beverage manufacturing**. Disponível em: <<http://www.marketresearch.com/First-Research-Inc-v3470/Nonalcoholic-Beverage-Manufacturing-8015912/>>. Acesso em: 19 março 2014.

MINAYO, M.C. **O desafio do conhecimento - pesquisa qualitativa em saúde**. 12° ed. São Paulo: Hucitec, 2010.

PROBEB – Associação Portuguesa de Bebidas Refrescantes Não alcoólicas. **Importância econômica do setor**. Disponível em: <http://www.probeb.pt/folder/pagina/ficheiro1/88_V3%20-%20SECTOR.pdf>. Acesso em: 14 março 2014a.

PROBEB – Associação Portuguesa de Bebidas Refrescantes Não alcoólicas. **Setor: Mercado e Estatísticas**. Disponível em: <<http://www.probeb.pt/conteudo/Mercado-e-estat%C3%ADsticas/-/47>>. Acesso em: 14 março 2014b.

QUEIROZ, J.T.M.; DORIA, M.deF.; ROSENBERG, M.W.; HELLER, L.; ZHOURI, A. Perceptions of bottled water consumers in three Brazilian municipalities. **Journal of**

Water and Health. v. 11, p. 520-531, 2013.

QUEIROZ, J.T.M.; ROSENBERG, M.W.; HELLER, L.; ZHOURI, A.; SILVA, S.S. News about tap and bottled water: can this influence people's choices? **Journal of Environmental Protection.** v. 3, p. 324-333, 2012.

SIEGRIST, M.; STAMPFLI, N.; KASTENHOLZ, H. Consumers' willingness to buy functional foods. The influence of carrier, benefit and trust. **Appetite.** v. 51, p. 526-29, 2008.

SIRÓ, I.; KÁPOLNA, E.; KÁPOLNA, B.; LUGASI, A. Functional food. Product development, marketing and consumer acceptance - a review. **Appetite.** v. 51, p. 456-67, 2008.

SLOAN, A.E. Top 10 Functional Food Trends. **Food Technology.** v. 4, p. 24-41, 2012.

VITAFOODS SOUTH AMERICA. **Ascensão da classe C faz mercado de alimentação funcional ganhar importância e crescer acima da média mundial no Brasil.** Disponível em: <http://www.vitafoodssouthamerica.com/page.cfm/Action=fileDownload/formatFor=press_1_assocPDF/fileName=1176419_assocPDF/fileExt=pdf>. Acesso em: 11 março 2013.

OBJETIVOS

Este trabalho teve como objetivo avaliar e interpretar a expectativa do consumidor de bebida funcional não alcoólica no Brasil e em Portugal usando a técnica do Discurso do Sujeito Coletivo (DSC).

Os objetivos específicos foram:

Reunir informações sobre as técnicas qualitativas mais utilizadas para avaliar e compreender a atitude e o comportamento do consumidor de alimentos e bebidas, incluindo a técnica qualiquantitativa denominada Discurso do Sujeito Coletivo, ainda pouco utilizada em estudos do comportamento do consumidor.

Realizar um estudo *cross-cultural* para avaliar o hábito de consumo de bebidas não alcoólicas de praticantes de atividade física no Brasil e em Portugal.

Estabelecer os critérios utilizados para aplicar o DSC e avaliar a percepção de consumidores de bebidas não alcoólicas sobre alimentos funcionais no Brasil e em Portugal.

Utilizar a técnica do DSC para avaliar e interpretar a expectativa do consumidor de bebida funcional não alcoólica visando indicar alternativas de bebidas que atendam às necessidades dos consumidores.

CAPÍTULO 1

A PESQUISA QUALITATIVA NO ESTUDO DO COMPORTAMENTO DO CONSUMIDOR

Artigo de revisão

A PESQUISA QUALITATIVA NO ESTUDO DO COMPORTAMENTO DO CONSUMIDOR

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RESUMO

Técnicas qualitativas têm sido utilizadas para avaliar as necessidades, percepções, preferências, atitudes e decisões dos consumidores de alimentos e bebidas. As técnicas mais utilizadas são grupos focais, entrevistas individuais, associações de palavras e listagem livre. A técnica quali quantitativa do Discurso do Sujeito Coletivo (DSC) permite identificar, interpretar e avaliar opiniões, desejos, crenças, atitudes, necessidades, motivos e comportamentos de uma população. O DSC preserva a natureza discursiva e qualitativa da opinião e torna inseparável a dimensão quantitativa associada à representatividade e generalização dos resultados. A literatura relacionada ao uso do DSC para avaliar o comportamento do consumidor de alimentos e bebidas é escassa. Poucos trabalhos têm sido publicados sobre o comportamento do consumidor de alimentos visando o desenvolvimento de produtos, principalmente no Brasil. Levando em consideração a importância das pesquisas qualitativas em estudos do comportamento do consumidor e a escassez de trabalhos utilizando a técnica do DSC, torna-se recomendado o seu uso para avaliar a necessidade, percepção, preferência, atitude e decisão dos consumidores. O conhecimento do comportamento, da expectativa e da necessidade dos consumidores de diferentes nichos de mercado e diferentes tipos de alimentos poderá dar suporte à indústria de alimentos e bebidas.

Palavras-chave: Estudos do comportamento do consumidor, Pesquisa qualitativa, Discurso do Sujeito Coletivo, Desenvolvimento de produto.

ABSTRACT

Qualitative research has been performed to investigate attitudes, beliefs, expectations and opinions of consumers about food and beverages. The in-depth interview, focus group, word association and free listing are the most used techniques. The Discourse of the Collective Subject (DCS) quali-quantitative technique allows to identify, interpret and evaluate opinions, desires, beliefs, attitudes, necessities, motives and behaviors of a population. This technique preserves the nature of the reasoning and qualitative nature of the opinion from the beginning to the end, making the quantitative dimension associated with representativeness and generalization of the results inseparable. The literature regarding the use of DCS to evaluate the behavior of consumer of food and beverage is scarce. Few studies have used the DCS technique to evaluate consumer expectation regarding food and beverages, particularly in Brazil. To this end, considering the importance of qualitative research in studies of consumer behavior and the scarcity of such studies, the DCS technique was used to evaluate the need, perception, preference, attitude and decision of consumers. The knowledge of behavior, expectations and needs of consumers in different market niches and different kinds of food can provide invaluable support to the food and beverage industry.

Keywords: Studies of consumer behavior, Qualitative research, Discourse of the Collective Subject, Product development.

INTRODUÇÃO

Os consumidores estão cada vez mais informados sobre a importância de uma alimentação saudável e atentos à grande diversificação de alimentos disponíveis no mercado. Consequentemente, vêm se tornando mais exigentes e buscando alimentos nutritivos, saudáveis, convenientes e seguros, que atendam suas necessidades e expectativas. A escolha, preferência e consumo de alimentos são processos complexos influenciados por vários fatores que podem ser intrínsecos, como cor, aroma, sabor e textura, e extrínsecos ao produto, como marca, preço, embalagem, etc. Embora a influência das variáveis intrínsecas na escolha e preferência de alimentos seja bastante estudada, trabalhos têm mostrado que os fatores extrínsecos também desempenham um papel importante na escolha, preferência e intenção de compra de alimentos e bebidas (FERRAREZI *et al.*, 2013; IOP; TEIXEIRA; DELIZA, 2006; JAEGER, 2006). Nesse sentido, o preço, marca, origem e tipo de produto, tamanho e tipo de embalagem, informações nutricionais, percepção da qualidade, ambiente da alimentação, selos de certificação, métodos de produção, impacto ambiental, entre outros, têm sido os fatores mais utilizados em pesquisas com o objetivo de compreender o comportamento do consumidor (FERRAREZI *et al.*, 2013; IOP; TEIXEIRA; DELIZA, 2006).

Além dos fatores intrínsecos e extrínsecos, a escolha dos alimentos também é determinada por aspectos sócio-culturais, biológicos e psicológicos. A cultura, crença, disponibilidade do produto, idade, estado fisiológico, necessidades energéticas e nutricionais, e atitude com relação ao alimento também são determinantes do comportamento do consumidor, e ainda, capazes de indicar a personalidade de uma sociedade (FALGUERA; ALIGUER; FALGUERA, 2012; GBADAMOSI; IWALOYE; BAMBER, 2009). Um grande número de técnicas tem sido utilizado para investigar atitudes, crenças, expectativas e opiniões dos consumidores sobre diferentes tipos de alimentos. As técnicas mais utilizadas podem ser classificadas em qualitativas e quantitativas.

As pesquisas qualitativas têm como objetivo compreender como e porquê determinados fatores afetam a decisão de compra e consumo de produtos, incluindo alimentos e bebidas. A pesquisa qualitativa se aplica ao estudo da história, das soluções, das representações, das crenças, das percepções e das opiniões. Tem caráter exploratório, utiliza poucos indivíduos e gera informações descritivas, capazes de identificar o comportamento do consumidor. Essa pesquisa trabalha com um universo de significados, motivos, aspirações, crenças, valores e atitudes, que correspondem à percepção e compreensão dos processos e dos fenômenos inerentes à atitude do consumidor, que não podem ser quantificados. É o resultado da interpretação que os indivíduos fazem a respeito de como vivem, sentem e pensam (MINAYO, 2010). Em pesquisas de mercado, *marketing* e desenvolvimento de produtos, as técnicas qualitativas mais utilizadas são as discussões em grupo (*focus group*), entrevista individual em profundidade (*in-depth interview*), entrevista por telefone, entrevista utilizando técnicas projetivas e observação do comportamento de compra e consumo (MALHOTRA, 2006; BARRIOS; COSTELL, 2004). Dentre essas, a entrevista individual em profundidade e as discussões em grupo (ou grupo focal) são as técnicas mais utilizadas em pesquisas com consumidor de alimentos. As técnicas projetivas também têm sido utilizadas, mas em menor proporção (BARRIOS; COSTELL, 2004).

A pesquisa quantitativa é capaz de medir objetivamente a percepção, opinião e atitude do consumidor de alimentos e bebidas. A coleta de dados é geralmente realizada utilizando questionários com perguntas fechadas (*closed questions*). As respostas são escolhidas de acordo com as opções de escalas estruturadas em que o indivíduo escolhe uma ou mais opções. Posteriormente os dados são submetidos à análise estatística (CORTÉS *et al.*, 2013; XIANLIANG; HONGYING, 2012; VERBEKE; PÉREZ-CUETO; GRUNERT, 2011; VERBEKE *et al.*, 2010; MUCCI; HOUGH; ZILIANI, 2004). Um número maior de indivíduos, compatível com a análise estatística, é utilizado comparativamente à pesquisa qualitativa (MALHOTRA, 2006; BARRIOS; COSTELL, 2004). Além disso, questionários também são utilizados para avaliar o hábito de consumo e a frequência alimentar, a análise conjunta de

fatores (*Conjoint Analysis*) para avaliar decisão de compra e consumo, e a análise sensorial para avaliar a aceitação e a preferência (YEN; LEWIS, 2013; FERRAREZI *et al.*, 2013; TOMASCHUNAS *et al.*, 2013; ARES *et al.*, 2010).

Dependendo do objetivo da pesquisa, o emprego conjunto de técnicas qualitativas e quantitativas é necessário para melhor compreender e explicar o comportamento do consumidor. Pesquisas qualitativas geralmente precedem pesquisas quantitativas, uma vez que permitem definir os aspectos mais importantes do produto para o consumidor, e seus resultados permitem tornar mais objetiva a pesquisa quantitativa. Não há dúvida sobre a utilidade do emprego conjunto de técnicas qualitativas e quantitativas, embora o uso independente tenha se tornado mais e mais frequente nos últimos anos (BLOCK *et al.*, 2013; ROTH-YOUSEY; CHU; REICKS, 2012; ZOELLNER *et al.*, 2012; HJELMAR, 2011; ARES; DELIZA, 2010; GUERRERO *et al.*, 2010; VERBEKE *et al.*, 2010; LAMPILA *et al.*, 2009; GBADAMOSI; IWALOYE; BAMBER, 2009; MAUBACH; HOEK; MCCREANOR, 2009; BARRIOS *et al.*, 2008).

O objetivo desse trabalho foi reunir informações sobre as técnicas qualitativas mais utilizadas para avaliar e compreender a atitude e o comportamento do consumidor de alimentos e bebidas. Nessa revisão serão abordadas as técnicas de grupo focal, entrevista em profundidade, técnicas projetivas e a técnica quali-quantitativa denominada Discurso do Sujeito Coletivo, ainda pouco utilizada em estudos do comportamento do consumidor.

Técnicas qualitativas utilizadas em estudos do comportamento do consumidor

Na técnica de grupo focal são realizadas uma série de sessões, com o objetivo de obter informações sobre percepções dos indivíduos relacionadas a um assunto de interesse. O objetivo principal é obter uma visão aprofundada ouvindo um grupo de pessoas do mercado-alvo falar sobre assuntos relacionados ao tema da pesquisa. As sessões são realizadas com um pequeno

grupo de entrevistados, utilizando perguntas não estruturadas que são conduzidas por um moderador. Em média, as sessões duram de uma a duas horas. Dependendo das características da pesquisa, o número de grupos pode variar entre dois e oito, contendo de oito a doze participantes em cada grupo. Isso depende do objetivo da pesquisa e da necessidade em detectar diferenças regionais ou diferenças sócio-demográficas, por exemplo. Os indivíduos de cada grupo devem ser homogêneos quanto às características demográficas e socioeconômicas, devendo-se evitar interações e conflitos relacionados a assuntos que não interessam ao pesquisador. As sessões são geralmente realizadas em uma sala especial, com uma área de observação, microfones e equipamentos de gravações (vídeo ou áudio) para reapresentação, transcrição e análise subsequente (BARRIOS; COSTELL, 2004). A importância da técnica está nos resultados inesperados que frequentemente se obtêm de um grupo de discussão livre (MALHOTRA, 2006).

Os grupos focais vêm se constituindo numa técnica importante de pesquisas em contextos de diversidade cultural, pois ajudam os pesquisadores a entender quais as expectativas e necessidades dos entrevistados, a percepção sobre suas experiências e os significados que atribuem. Isso ajuda a evitar a tendência de impor conceitos e percepções que acabariam por levar a interpretações etnocêntricas e, portanto, equivocadas (BISOL, 2012). Esta técnica têm sido utilizada intensivamente na área do *marketing* para abordar diferentes assuntos, como entender as percepções, preferências e comportamento do consumidor em relação a uma categoria de produtos, incluindo alimentos e bebidas, gerar novas idéias para o desenvolvimento de produtos ou sobre produtos mais antigos, elaborar conceitos e idéias criativas para propaganda, entre outros (MALHOTRA, 2006; BARRIOS; COSTELL, 2004).

A técnica de grupo focal apresenta inúmeras vantagens como a possibilidade de obter um maior número de informações, percepções e idéias quando comparada a respostas obtidas individualmente; o desejo dos entrevistados em expressar suas idéias e expor seus sentimentos à medida em que o nível geral de entusiasmo sobre o tema aumenta no grupo; as respostas podem

ser espontâneas e não convencionais já que não se solicita aos entrevistados responderem a perguntas específicas, entre outras. A técnica também apresenta algumas desvantagens, dentre elas a dificuldade em moderar os grupos; a natureza não estruturada das respostas, tornando a codificação, análise e interpretação difíceis; a tendência dos grupos serem confusos; além do ponto de vista individual dos entrevistados ser influenciado pelo grupo (MALHOTRA, 2006).

Barrios *et al.* (2008) avaliaram a percepção de consumidores espanhóis sobre alimentos funcionais e as razões para o consumo de iogurte, um dos alimentos funcionais mais populares, usando a técnica de grupo focal. Os entrevistados foram selecionados de acordo com a idade, sexo, nível de escolaridade e hábito de consumir iogurte pelo menos uma vez por semana. Os autores conduziram seis grupos focais contendo de nove a dez participantes em cada grupo, totalizando 59 participantes. Cada sessão durou aproximadamente 90 minutos e as entrevistas foram gravadas em áudio. Os consumidores jovens (18-30 anos) demonstraram, em geral, atitude negativa com relação aos alimentos funcionais, embora essa atitude varie de acordo com o tipo de alimento. Apenas 25% dos entrevistados já tinham ouvido falar no termo alimento funcional e a maioria definiu alimento funcional como aquele que teve algum nutriente adicionado para torná-lo mais saudável. Após uma breve explicação por parte do moderador dos grupos focais sobre alimentos funcionais, os entrevistados passaram a relatar alimentos como iogurtes adicionados de probióticos e sucos com adição de vitaminas. A compra e o consumo de iogurte foi mais dependente das qualidades sensoriais e do preço do que das informações nutricionais presentes no rótulo desses produtos.

Um estudo qualitativo foi realizado para avaliar como a expectativa dos pais influenciava os filhos no consumo de bebidas não alcoólicas (ROTH-YOUSEY; CHU; REICKS, 2012). Foram realizados seis grupos focais com pais de crianças com idade entre 10 e 13 anos no Centro-Oeste de Minnesota, Estados Unidos. Cada grupo focal continha entre seis e dez participantes, totalizando 49 participantes. As expectativas dos pais quanto ao consumo de bebidas não alcoólicas pelas crianças foram baseadas em questões relacionadas à saúde e o preço

da bebida. Os pais demonstraram administrar suas expectativas e estabelecer regras no consumo de bebidas não alcoólicas em casa, controlando a disponibilidade de bebidas consideradas não saudáveis, como as bebidas adicionadas de açúcar, e aumentando a disponibilidade de bebidas saudáveis, como água, leite ou suco de fruta. Os pais relataram que as crianças consumiam bebidas adicionadas de açúcar, como refrigerante e sucos prontos para beber, quando elas não eram supervisionadas ou quando o consumo era realizado fora de casa. O estudo forneceu idéias sobre as expectativas e práticas dos pais para gerenciar o consumo de bebidas pelos filhos. Os autores sugeriram que as informações sobre o consumo de bebidas não alcoólicas por crianças sejam utilizadas em estudos longitudinais de intervenção pai-filho abordando questões de saúde, custos, disponibilidade e acessibilidade de bebidas saudáveis em casa e fora de casa, melhorando a ingestão de bebidas não alcoólicas pelas crianças.

Outro estudo utilizando a técnica de grupo focal, avaliou as atitudes de consumidores adultos quanto ao consumo de bebidas adicionadas de açúcar, como refrigerante, isotônico, energético, suco de fruta e chá pronto para beber, além de água e bebidas artificialmente adoçadas (ZOELLNER *et al.*, 2012). Oito grupos focais foram conduzidos com 54 adultos residentes da zona rural no sudoeste de Virginia, Estados Unidos. Foram incluídos na amostra aqueles que tinham nacionalidade inglesa, com mais de 18 anos de idade e que consumiam mais de um copo de bebida adicionada de açúcar por dia. Cada grupo focal foi composto por cinco a nove participantes e teve duração média de 90 minutos. Os principais fatores que influenciaram o consumo dessas bebidas foram o sabor, disponibilidade, conveniência, hábito de consumo e preço. Consequências à saúde relacionadas à qualidade das bebidas e da água também foram relatados como fatores importantes que influenciaram o consumo. Para os consumidores as bebidas do tipo isotônico, energético, suco de fruta e chá pronto para beber contêm alto teor de água, de eletrólitos, de antioxidantes, e baixo teor de açúcar, oferecem benefícios à saúde e saciam a sede. A água foi considerada uma bebida refrescante, que ajuda o metabolismo e mantém o corpo hidratado. Os consumidores relataram que as bebidas artificialmente adoçadas

não são benéficas à saúde, pois contêm edulcorantes que podem contribuir para o desenvolvimento de câncer.

Block *et al.* (2013) avaliaram o consumo de água e bebidas adicionadas de açúcar, como suco de fruta, refrigerante e chá pronto para beber de estudantes universitários e se as intervenções comportamentais poderiam reduzir o consumo de bebidas adicionadas de açúcar. A pesquisa foi realizada em seis universidades das cidades de Massachusetts e Louisiana, Estados Unidos. Doze grupos focais foram realizados, sendo dois grupos divididos de acordo com o sexo, em cada universidade, totalizando 90 participantes. Alguns temas surgiram nas discussões em grupo, como o sabor da bebida ser fundamental para o consumo, o preço ser importante porém secundário e o conteúdo nutricional da bebida que teve interesse limitado. O consumo de suco foi considerado benéfico à saúde e o de água era tido como importante principalmente para hidratação. Os estudantes expressaram preferir bebidas adicionadas de açúcar. O preço foi exclusivamente importante para bebidas consideradas de sabor agradável e que custavam menos de um dólar. Os estudantes relataram que o teor calórico é importante para escolhas alimentares, mas a maioria não tinha conhecimento do teor de calorias das bebidas. O suco foi considerado uma bebida que oferece benefícios à saúde em comparação ao refrigerante. Mensagens educativas de alto impacto à saúde foram consideradas necessárias para reduzir o consumo de bebidas adicionadas de açúcar.

Gbadamosi, Iwaloye e Bamber (2009), avaliaram o consumo de refrigerante e bebidas de fruta de estudantes da Nigéria, utilizando abordagem qualitativa, combinando três grupos focais e 20 entrevistas em profundidade. Cada grupo focal continha 7 participantes, sendo um grupo composto predominantemente por mulheres, outro por homens e um terceiro combinando ambos os sexos. As entrevistas em profundidade foram conduzidas com 11 mulheres e 9 homens. Cada grupo focal durou em média uma hora enquanto as entrevistas em profundidade duraram de 50 minutos a uma hora. Os resultados indicaram que os participantes consumiam principalmente refrigerantes e bebidas à base de frutas ou vegetais. Os autores identificaram que o consumo das

bebidas foi influenciado por vários fatores, como a conveniência e disponibilidade para compra, preço, questões relacionadas à saúde e influência social e cultural. Quanto à conveniência, a importância da disponibilidade do produto para compra em diferentes locais, além do supermercado, foi enfatizada pelos estudantes. A questão do preço emergiu na pesquisa em duas direções, uma delas indicando que os estudantes utilizam o preço para selecionar uma marca no momento da compra e a outra sobre a necessidade de tomar cuidado com marcas muito baratas, por não serem “confiáveis”. Segundo os autores, as questões relacionadas à saúde são levadas em consideração no momento da compra, especialmente para as bebidas que contêm quantidades significativas de cafeína e açúcar, mostrando a preocupação dos estudantes quanto ao consumo desses ingredientes. Na questão social e cultural, o consumo das bebidas foi associado com momentos de diversão, descanso, prazer e união, quando consumidas em grupos.

As entrevistas em profundidade constituem outra técnica de obtenção de dados qualitativos. São caracterizadas por uma entrevista não estruturada, direta, pessoal, em que um único respondente é testado por um entrevistador. A duração de cada entrevista pode variar entre uma a duas horas (MALHOTRA, 2006; BARRIOS; COSTELL, 2004). A entrevista em profundidade pode revelar análises pessoais mais aprofundadas do que os grupos focais. Essas entrevistas atribuem as respostas diretamente ao entrevistado, ao contrário dos grupos focais, em que geralmente é difícil determinar qual dos entrevistados deu uma resposta em particular. Essa técnica resulta em uma livre troca de informações que pode não ocorrer em grupos focais pois nestes há uma certa pressão social no sentido de se ajustar à reação do grupo. Devido à longa duração das entrevistas em profundidade o número de entrevistados é menor (MALHOTRA, 2006).

Entrevistas em profundidade geralmente são utilizadas para aprofundar a opinião do entrevistado relacionada a assuntos confidenciais, delicados ou embaraçosos, em situações em que existem imposição de normas sociais e o entrevistado pode ser facilmente influenciado pela resposta do grupo, na compreensão detalhada de um comportamento, opinião, percepção,

necessidades e expectativas, em entrevistas com profissionais e com concorrentes que não desejem revelar informações em um contexto de grupo, etc (MALHOTRA, 2006; BARRIOS; COSTELL, 2004).

Maubach, Hoek e McCreanor (2009) avaliaram os fatores que influenciavam o comportamento de compra de alimentos pelos pais nos supermercados, particularmente quanto ao papel desempenhado pela informação nutricional nos rótulos dos produtos. Os autores utilizaram a técnica de entrevista em profundidade com 15 pais da Nova Zelândia, que tinham pelo menos uma criança entre cinco e doze anos de idade. Os resultados mostraram que enquanto os pais desejavam selecionar alimentos saudáveis para sua família, fatores como preço, propagandas e a pressão dos filhos, dominavam suas decisões. Os rótulos nutricionais tiveram pouca influência na escolha dos alimentos, em grande parte porque os rótulos foram citados como complexos e de difícil entendimento.

Hjelmar (2011) utilizou a técnica da entrevista em profundidade com 16 consumidores de alimentos orgânicos na Dinamarca, para obter uma visão sobre a compra de produtos orgânicos e explorar os principais fatores que direcionavam esse processo. Os resultados indicaram que o comportamento do consumidor de alimentos orgânicos foi direcionado pela conveniência e práticas reflexivas. O comportamento de compra conveniente indicou a necessidade desse produto estar disponível nos supermercados, em embalagens visivelmente identificadas e com pouca diferença de preço do produto convencional. As práticas reflexivas foram identificadas quando os consumidores apontaram as considerações de saúde, qualidade (sabor), ética (saúde do animal) e política (ambiental) como fatores importantes na compra de produtos orgânicos.

Diferentemente das técnicas de grupo focal e entrevista em profundidade, as técnicas projetivas procuram disfarçar ou encobrir o propósito da pesquisa. A técnica projetiva é uma forma não estruturada e indireta de fazer perguntas que incentive os entrevistados a projetarem suas motivações, crenças, atitudes ou sensações subjacentes sobre o assunto de interesse. Pode-

se pedir aos entrevistados que interpretem o comportamento de outro indivíduo em vez de descrever o seu próprio comportamento, por exemplo. Ao interpretarem o comportamento de outras pessoas, os entrevistados indiretamente projetam para a situação suas próprias motivações, crenças ou sentimentos. As atitudes dos entrevistados são reveladas analisando-se suas reações a cenários deliberadamente não estruturados, vagos e ambíguos. Quanto mais ambígua for a situação, mais os entrevistados projetam suas emoções, necessidades, motivos, atitudes e valores. Em pesquisas de *marketing* e estudos com consumidor, as técnicas projetivas devem constituir um estímulo relativamente ambíguo permitindo que os entrevistados interpretem de acordo com sua percepção e com suas palavras. A natureza do estímulo deve oferecer uma direção suficiente para que o entrevistado faça alguma associação com o assunto de interesse. Os estímulos podem ser, por exemplo, uma lista de palavras ou imagens de produtos (MALHOTRA, 2006; DONOGHUE, 2000).

A associação de palavras é a técnica projetiva mais conhecida. Apresenta-se aos entrevistados uma lista de palavras, uma de cada vez, e se pede que respondam a cada uma com a primeira palavra, ou mais, que lhes vier à mente. As palavras de interesse, chamadas de palavras de teste, são entremeadas na lista, a qual também contém algumas palavras neutras, para disfarçar o propósito da pesquisa. A suposição fundamental dessa técnica é que a associação permite aos entrevistados revelarem suas sensações interiores sobre o assunto de interesse (MALHOTRA, 2006).

Outra técnica projetiva é a listagem livre, geralmente utilizada para avaliar percepções e conceitos sobre um assunto. O procedimento consiste em fazer uma pergunta relacionada ao objetivo da pesquisa a cada entrevistado, obtendo uma lista com os principais itens que representem as idéias que surgiram nas respostas. As respostas às entrevistas podem ser analisadas a partir de um enfoque semiquantitativo que permite avaliar padrões de respostas (BISOL, 2012).

As técnicas projetivas de associação de palavras ou listagem livre, apresentam uma

vantagem importante sobre as técnicas de grupo focal e entrevista em profundidade. Essas técnicas podem provocar respostas que os entrevistados não dariam ou não poderiam dar se conhecessem o objetivo da pesquisa. Por outro lado, as técnicas projetivas apresentam inúmeras desvantagens, como exigir entrevistas pessoais com entrevistadores altamente treinados, a necessidade de intérpretes qualificados para analisar as respostas e por isso tendem a ser dispendiosas. Há também um sério risco de tendenciosidade na interpretação. Direciona-se o uso das técnicas projetivas quando a informação desejada não pode ser obtida com precisão por outras técnicas ou em pesquisas exploratórias para proporcionar entendimento e compreensão iniciais do assunto (MALHOTRA, 2006).

Ares e Deliza (2010) avaliaram a percepção dos consumidores de sobremesas lácteas quanto às características de embalagens utilizando a técnica de associação de palavras e listagem livre. Consumidores de sobremesas lácteas da cidade de Montevideo, Uruguay, com frequência de consumo de mais de uma vez na semana foram selecionados (n=200). Os aspectos de embalagens mais relevantes para os consumidores foram o modelo da embalagem e a cor, assim como o formato do rótulo. A data de validade, a marca e a informação nutricional foram as informações mais importantes que os consumidores esperavam encontrar nos rótulos de sobremesas lácteas.

Guerrero *et al.* (2010) verificaram a percepção de consumidores Europeus com relação ao conceito tradicional no contexto alimentos em seis países da Europa (Bélgica, França, Itália, Noruega, Polônia e Espanha), utilizando a associação de palavras. Os consumidores foram recrutados de acordo com seu envolvimento na decisão de compra de alimentos e preparo dos alimentos em casa. Aproximadamente 120 indivíduos de cada país participaram da pesquisa, totalizando 721 participantes. Os entrevistados mostraram ter uma idéia clara na formação da palavra tradicional. Mais de dez idéias foram mencionadas, como sensorial, saúde, elaboração, herança, variedade, hábito, origem, simplicidade, ocasiões especiais e *marketing*. Segundo os autores os resultados confirmaram a definição do conceito de alimento tradicional obtido num

estudo prévio com indivíduos dos mesmos seis países utilizando a técnica de grupo focal (GUERRERO *et al.*, 2009). Em geral, os países do sul da Europa associaram o conceito tradicional com conceitos mais amplos, como herança, cultura ou história. Os países do norte e do centro da Europa focaram principalmente em questões relacionadas à conveniência, saúde ou adequação para o consumo. Segundo os autores, os resultados dessa pesquisa exploratória qualitativa promoveram idéias para inovação e desenvolvimento de novos produtos tradicionais no mercado europeu (GUERRERO *et al.*, 2010).

Discurso do Sujeito Coletivo (DSC)

A técnica do Discurso do Sujeito Coletivo (DSC) vem sendo desenvolvida desde o final da década de 1990. Essa técnica emprega uma abordagem qualiquantitativa reunindo opiniões, percepções, preferências, atitudes e decisões dos participantes num discurso. O DSC permite identificar, interpretar e avaliar opiniões, desejos, crenças, atitudes, necessidades, motivos e comportamentos de uma população. São realizadas entrevistas individuais ou em grupo, que são transcritas e categorizadas posteriormente em um único discurso. A pesquisa preserva a natureza discursiva e qualitativa da opinião do começo ao fim e torna inseparável a dimensão quantitativa associada à representatividade e generalização dos resultados, representando um avanço na qualidade de pesquisas de opinião (LEFÈVRE; LEFÈVRE, 2010).

Os depoimentos compõem a matéria-prima, sob a forma de um ou vários discursos-síntese escritos na primeira pessoa do singular. Como o pensamento é essencialmente discursivo, só pode ser realmente atingido a partir das opiniões dos indivíduos de determinada população. Perguntas abertas permitem que as respostas sejam expressas livremente, o que viabiliza a geração dos discursos. Cada discurso tem um determinado peso, equivalente à proporção de indivíduos que aderem a determinada opinião, sobre o total de pesquisados. A técnica do DSC indica, através do número de indivíduos, quantos depoimentos são necessários

para descrever cada discurso (LEFÈVRE, LEFÈVRE, 2010; LEFÈVRE; LEFÈVRE; MARQUES, 2009).

Para a construção dos DSCs são levadas em consideração as figuras metodológicas propostas por Lefèvre e Lefèvre (2010). As expressões-chave (ECH) são pedaços, trechos ou transcrições literais do discurso, demarcadas pelo pesquisador e que revelam a essência do depoimento ou, de forma mais precisa, do conteúdo discursivo dos segmentos em que se divide o depoimento e que, em geral, correspondem às questões da pesquisa. As ECH são a matéria-prima do DSC. A idéia central (IC) é um nome ou expressão linguística que revela e descreve, de forma sintética, precisa e fidedigna, o sentido de cada um dos discursos analisados e de cada conjunto homogêneo de ECH, que vai dar origem, posteriormente, ao DSC. A IC é uma descrição do sentido de um depoimento ou de um conjunto de depoimentos. O DSC é o discurso síntese redigido na primeira pessoa do singular e composto pelas ECH que têm a mesma IC (LEFÈVRE; LEFÈVRE, 2010).

A técnica do DSC tem sido utilizada em diversas áreas como a enfermagem, nutrição, odontologia, psicologia, saúde pública e administração, com intuito de avaliar a percepção e a opinião dos entrevistados sobre o assunto da pesquisa (SILVA; BENITO, 2013; FERREIRA *et al.*, 2013; PINHEIRO *et al.*, 2012; MOTA; MELO; PAIXÃO, 2012; BARDAL *et al.*, 2012; CAVALCANTI *et al.*, 2011; ALMEIDA; PAZ; DA SILVA, 2011; LOPES; XIMENES, 2011; SILVA *et al.*, 2010; SILVA; SANTOS, 2010; CONTI; BERTOLIN; PERES, 2010; SILVA *et al.*, 2009; SALVE; SILVA, 2009; ASSÃO *et al.*, 2007; TAVOLARO; OLIVEIRA; LEFÈVRE, 2006; UNFER *et al.*, 2006; LEFÈVRE; CRESTANA; CORNETTA, 2003; TEIXEIRA; LEFÈVRE, 2001).

A literatura relacionada a trabalhos que utilizam o DSC para avaliar o comportamento do consumidor de alimentos e bebidas é escassa. Recentemente, Queiroz *et al.* (2013) avaliaram a percepção de consumidores de água engarrafada em suas residências em três municípios brasileiros do estado de Minas Gerais, Itabirito, Ouro Preto e Vespasiano. Os autores

entrevistaram 10 famílias em cada município, totalizando 30 entrevistas e os resultados foram analisados utilizando a técnica do DSC. A decisão sobre o consumo de água engarrafada na residência era predominantemente realizada pelas mulheres. Os entrevistados eram particularmente preocupados com os riscos à saúde e expressaram preferência para a segurança e as qualidades sensoriais da água engarrafada, especialmente nos casos onde o abastecimento de água da torneira não cumpriam plenamente os padrões de qualidade para água. Os entrevistados em grande parte desconheciam a origem, o tipo de armazenamento, e os impactos sociais e ambientais da água engarrafada. Os resultados destacaram a importância de esforços na educação para o consumo de água entre a população em geral e o papel fundamental das mulheres no cuidado em consumir água potável. Os resultados também apoiaram fortemente a relevância de garantir o fornecimento de água potável, desde a fonte até o ponto do consumo, para aumentar a confiança dos consumidores. Queiroz *et al.* (2012) avaliaram como as notícias de jornais sobre água engarrafada e água de torneira influenciavam as escolhas dos consumidores Canadenses. Dois jornais Canadenses de circulação nacional foram analisados utilizando a técnica do DSC. Os resultados mostraram que a mídia de impressão selecionada apresentou uma série de reportagens que forneciam ao leitor reflexões sobre a atual situação do abastecimento de água no Canadá. A informação mais importante era sobre o risco do consumo de água de torneira. Informações sobre a qualidade da água engarrafada e de torneira foram consideradas ambíguas.

Pesquisa qualitativa no desenvolvimento de produtos

As etapas iniciais do processo de desenvolvimento de produtos realizadas entre a geração das idéias para um produto e a decisão da empresa em investir no seu desenvolvimento são designadas em inglês pela expressão *fuzzy front end* (KHURANA; ROSENTHAL, 1998). Segundo Van Kleef, Van Trijp e Lunning (2005), incorporar o “voz do consumidor” nas fases

iniciais do processo de desenvolvimento de produtos é importante para o sucesso no mercado. Pesquisas com o consumidor são muitas vezes consideradas difíceis nesta fase, pois não sabe-se o que perguntar aos consumidores neste momento. Um dos argumentos é que se os consumidores pudessem articular melhor suas preferências alimentares, o desenvolvimento de produtos seria revolucionado. A realidade é que os consumidores podem ter apenas uma vaga noção do motivo pelo qual eles gostam ou consomem determinados alimentos. No entanto, as pesquisas com consumidor ajudam a aumentar as chances de sucesso no mercado. Mesmo que o consumidor não possa sempre ser capaz de expressar os seus desejos, é importante entender como eles percebem os produtos, como suas necessidades são moldadas e influenciadas e como fazem suas escolhas alimentares.

A existência de poucas pesquisas na área do comportamento do consumidor de alimentos para o desenvolvimento de produtos, principalmente no Brasil, é uma das características que sugere o uso de técnicas qualitativas. Técnicas quantitativas não produzem a interação entre pesquisador e pesquisado que favorece o surgimento de novas idéias. A interação leva o entrevistado a falar de suas expectativas e necessidades. O estudo do comportamento do consumidor de alimentos parece necessitar de técnicas que possibilitem interações e construções em torno de um tema tão diverso (CASOTTI, 2002).

De acordo com Falguera, Aliguer e Falguera (2012) as pessoas não consomem apenas para satisfazer suas necessidades biológicas, mas também para expressar um sentimento e melhorar o bem-estar psicológico. Preocupações com a saúde e bem-estar físico, com a cultura e a ética, com o bem-estar do animal ou pontos de vista político e moral das empresas são exemplos de algumas questões que influenciam o comportamento das pessoas ao escolher seus alimentos. As pessoas consomem imagens e idéias, bem como o conteúdo nutricional dos alimentos.

A técnica do Discurso do Sujeito Coletivo (DSC) permite entender os fatores capazes de determinar o comportamento dos consumidores (LEFÈVRE; LEFÈVRE, 2010; LEFÈVRE;

LEFÈVRE, 2003), contribuindo para a identificação das necessidades, percepções, preferências, atitudes e decisões dos consumidores no desenvolvimento de produtos.

Ressalta-se que em estudos do comportamento do consumidor de alimentos no âmbito internacional, como o pesquisador nem sempre está familiarizado com o consumidor do mercado externo, a pesquisa qualitativa tem importância fundamental. A pesquisa qualitativa pode ajudar a entender o problema e a estabelecer uma abordagem gerando questões e hipóteses de pesquisa, modelos e características relevantes que influenciarão nas decisões do *marketing*, principalmente no desenvolvimento de produtos. A pesquisa qualitativa também pode, portanto, revelar diferenças ou similiaridades entre os mercados externos e interno (MALHOTRA, 2006; STEENKAMP, 2001).

Considerações finais

Levando em consideração a importância das pesquisas qualitativas em estudos do comportamento do consumidor e a escassez de trabalhos utilizando a técnica do DSC, torna-se recomendado o seu uso para avaliar a necessidade, percepção, preferência, atitude e decisão dos consumidores. O conhecimento do comportamento, da expectativa e da necessidade dos consumidores de diferentes nichos de mercado e diferentes tipos de alimentos poderá dar suporte à indústria de alimentos e bebidas.

Referências

- ARES, G.; DELIZA, R. Identifying important package features of milk desserts using free listing and word association. **Food Quality and Preference**. v. 21, p. 621-628, 2010.
- ARES, G.; GIMÉNEZ, A.; BARREIRO, C.; GÁMBARO, A. Use of an open-ended question to identify drivers of liking of milk desserts. Comparison with preference mapping techniques. **Food Quality and Preference**. v. 21, p. 286-294, 2010.
- ALMEIDA, G.B.S.; PAZ, E.P.A.; DA SILVA, G.A. Representações sociais sobre hipertensão arterial e o cuidado: o discurso do sujeito coletivo. **Acta Paulista de Enfermagem**. v. 24, n. 4, p. 459-465, 2011.
- ASSÃO, T.Y.; CORDEIRO, A.A.; COSTA, C.; CERVATO, A.M. Práticas e percepções acerca da segurança alimentar e nutricional entre os representantes das instituições integrantes de um centro de referência localizado na região do Butantã, município de São Paulo. **Saúde e Sociedade**. V. 16, n. 1, p. 102-116, 2007.
- BARDAL, P.A.P.; OLYMPIO, K.P.K.; BUZALAF, M.A.R.; DALLARI, S.G. Questões atuais sobre a vigilância sanitária das concentrações de flúor em alimentos. **Cadernos de Saúde Pública**. v. 28, n. 3, p. 573-582, 2012.
- BARRIOS, E.X.; COSTELL, E. Review: Use of methods of research into consumers' opinions and attitudes in food research. **Food Science and Technology International**. v. 10, n. 6, p. 359-371, 2004.
- BARRIOS, E.X.; BAYARRI, S.; CARBONELL, I.; IZQUIERDO, L.; COSTELL, E. Consumer attitudes and opinions toward functional foods: a focus group study. **Journal of Sensory Studies**. v. 23, p. 514-525, 2008.
- BISOL, C.A. Research strategies in the context of cultural diversity: free-listing interviews, interviews with key-informants and focus groups. **Estudos de Psicologia**. v. 29, p. 719-726, 2012.
- BLOCK, J.P.; GILLMAN, M.W.; LINAKIS, S.K.; GOLDMAN, R.E. If It tastes good, I'm drinking It: Qualitative study of beverage consumption among college students. **Journal of Adolescent Health**. v. 52, p. 702-706, 2013.
- CASOTTI, L. **À mesa com a família**: Um estudo do comportamento do consumidor de alimentos. Rio de Janeiro: Mauad, 2002.
- CAVALCANTI, C.L.; GONÇALVES, M.C.R.; CAVALCANTI, A.L.; DA COSTA, S.F.G.; ASCIUTTI, L.S.R. Programa de intervenção nutricional associado à atividade física: discurso de idosas obesas. **Ciência e Saúde Coletiva**. v. 16, n. 5, p. 2383-2390, 2011.
- CONTI, M.A.; BERTOLIN, M.N.T.; PERES, S.V. A mídia e o corpo: o que o jovem tem a dizer? **Ciência e Saúde Coletiva**. v. 15, n. 4, p. 2095-2103, 2010.
- CORTÉS, D.E.; MILLÁN-FERRO, A.; SCHNEIDER, K.; VEGA, R.R.; CABALLERO, E. Food purchasing selection among low-income, spanish-speaking latinos. **American Journal of Preventive Medicine**. v. 44, n. 3S3, p. S267-273, 2013.

- DONOGHUE, S. Projective techniques in consumer research. **Journal of Family Ecology and Consumer Science**. v. 28, p. 47-53, 2000.
- FALGUERA, V.; ALIGUER, N.; FALGUERA, M. An integrated approach to current trends in food consumption: moving toward functional and organic products? **Food Control**. v. 26, p. 274-281, 2012.
- FERRAREZI, A.C.; MINIM, V.P.R.; DOS SANTOS, K.O.; MONTEIRO, M. Consumer attitude towards purchasing intent for ready to drink orange juice and nectar. **Nutrition and Food Science**. v. 43, n. 4, p. 304-312, 2013.
- FERREIRA, R.G.L.A.; MARQUES, R.A.A.; MENEZES, L.M.B.; NARVAI, P.C. Múltiplos aspectos do uso do flúor em saúde pública na visão de lideranças da área de saúde. **Ciência e Saúde Coletiva**. v. 18, n. 7, p. 2139-2146, 2013.
- GBADAMOSI, A.; IWALOYE, O.O.; BAMBER, D. An exploratory study of students' consumption of non-alcoholic beverages in Nigeria. A qualitative perspective. **Nutrition and Food Science**. v. 39, n. 6, p. 609-618, 2009.
- GUERRERO, L.; GUÀRDIA, M.D.; XICOLA, J.; VERBEKE, W.; VANHONACKER, F.; ZAKOWSKA-BIEMANS, S. et al. Consumer-driven definition of traditional food products and innovation in traditional foods. A qualitative cross-cultural study. **Appetite**. v. 52, p. 345-354, 2009.
- GUERRERO, L.; CLARET, A.; VERBEKE, W.; ENDERLI, G.; ZAKOWSKA-BIEMANS, S.; VANHONACKER, F. et al. Perception of traditional food products in six European regions using free word association. **Food Quality and Preference**. v. 21, p. 225-233, 2010.
- HJELMAR, U. Consumers' purchase of organic food products. A matter of convenience and reflexive practices. **Appetite**. v. 56, p. 336-344, 2011.
- IOP, S.C.F.; TEIXEIRA, E.; DELIZA, R. Consumer research: extrinsic variables in food studies. **British Food Journal**. v. 108, n. 11, p. 894-903, 2006.
- JAEGER, S. Non-sensory factors in sensory science research. **Food Quality and Preference**. v. 17, p. 132-144, 2006.
- KHURANA, A.; ROSENTHAL, S.R. Towards holistic "Front Ends" in new product development. **Journal Product Innovation Management**. v. 15, p. 57-74, 1998.
- LAMPILA, P.; LIESHOUT, M.V.; GREMMEN, B.; LAHTEENMAKI, L. Consumer attitudes towards enhanced flavonoid content in fruit. **Food Research International**. v. 42, p. 122-129, 2009.
- LEFÈVRE, A.M.C.; CRESTANA, M.F.; CORNETTA, V.K. A utilização da metodologia do discurso do sujeito coletivo na avaliação qualitativa dos cursos de especialização "capacitação e desenvolvimento de recursos humanos em saúde-CADRHU", São Paulo – 2002. **Saúde e Sociedade**. v. 12, n. 2, p. 68-75, 2003.

- LEFÈVRE, F.; LEFÈVRE, A.M.C. **O discurso do sujeito coletivo**. Um novo enfoque em pesquisa qualitativa (Desdobramentos). Caxias do Sul: Educs, 2003.
- LEFÈVRE, F.; LEFÈVRE, A.M.C. **Pesquisa de representação social**. Um enfoque qualiquantitativo. Brasília: Liber Livros, 2010.
- LEFÈVRE, F.; LEFÈVRE, A.M.C.; MARQUES, M.C.C. Discourse of the collective subject, complexity and self-organization. **Ciência & Saúde Coletiva**. v. 14, n. 4, p. 1193-1204, 2009.
- LOPES, M.S.V.; XIMENES, L.B. Enfermagem e saúde ambiental: possibilidades de atuação para a promoção da saúde. **Revista Brasileira de Enfermagem**. v. 64, n. 1, p. 72-77, 2011.
- MALHOTRA, N.K. 2006. Concepção de Pesquisa exploratória: Pesquisa qualitativa. In: MALHOTRA, N.K. (Ed.), **Pesquisa de marketing: uma orientação aplicada**. Porto Alegre: Bookman. 4 ed., p. 152-79, 2006.
- MAUBACH, N.; HOEK, J.; MCCREANOR, T. An exploration of parents' food purchasing behaviours. **Appetite**. v. 53, p. 297-302, 2009.
- MINAYO, M.C. **O desafio do conhecimento - pesquisa qualitativa em saúde**. 12ª ed. São Paulo: Hucitec, 2010.
- MOTTA, G.S.; MELO, D.R.A.; PAIXÃO, R.B. O jogo de empresas no processo de aprendizagem em administração: o discurso coletivo de alunos. **Revista de Administração Contemporânea**. v. 16, n. 3, p. 342-359, 2012.
- MUCCI, A.; HOUGH, G.; ZILIANI, C. Factors that influence purchase intent and perceptions of genetically modified foods among Argentine consumers. **Food Quality and Preference**. v. 15, p. 559-567, 2004.
- PINHEIRO, A.R.O.; RECINE, E.; ALENCAR, B.; FAGUNDES, A.A.; SOUSA, J.S.; MONTEIRO, R.A.; TORAL, N. Percepção de professores e estudantes em relação ao perfil de formação do nutricionista em saúde pública. **Revista de Nutrição**. v. 25, n. 5, p. 631-643, 2012.
- QUEIROZ, J.T.M.; DORIA, M.deF.; ROSENBERG, M.W.; HELLER, L.; ZHOURI, A. Perceptions of bottled water consumers in three Brazilian municipalities. **Journal of Water and Health**. v. 11, p. 520-531, 2013.
- QUEIROZ, J.T.M.; ROSENBERG, M.W.; HELLER, L.; ZHOURI, A.; SILVA, S.S. News about tap and bottled water: can this influence people's choices? **Journal of Environmental Protection**. v. 3, p. 324-333, 2012.
- ROTH-YOUSEY, L.; CHU, Y.L.; REICKS, M. A qualitative study to explore how parental expectations and rules influence beverage choices in early adolescence. **Journal of Nutrition Education and Behavior**. V. 44, n. 6, p. 644-652, 2012.
- SALVE, J.M.; SILVA, I.A. Representações sociais de mães sobre a introdução de alimentos complementares para lactentes. **Acta Paulista de Enfermagem**. v. 22, n. 1, p. 43-48,

2009.

- SILVA, B.F.S.; BENITO, G.A.V. A voz de gestores municipais sobre o acesso à saúde nas práticas de gestão. **Ciência e Saúde Coletiva**. v. 18, n. 8, p. 2189-2200, 2013.
- SILVA, S.R.; HELLER, L.; VALADARES, J.C.; CAIRNCROSS, S. O cuidado domiciliar com a água de consumo humano e suas implicações na saúde: percepções de moradores em Vitória (ES). **Revista Engenharia Sanitária e Ambiental**. v. 14, n. 4, p. 521-532, 2009.
- SILVA, S.R.; HELLER, L.; VALADARES, J.C.; CAIRNCROSS, S. Relationship (or its lack) between population and a water and sanitation service: a study of users' perception in Vitoria (ES) Brazil. **Journal of water and health**. v. 8, p. 764-778, 2010.
- SILVA, B.T.; SANTOS, S.S.C. Cuidados aos idoso institucionalizados – opiniões do sujeito coletivo enfermeiro para 2026. **Acta Paulista de Enfermagem**. v. 23, n. 6, p. 775-781, 2010.
- STEENKAMP, J.B.E.M. The role of national culture in international marketing research. **International Marketing Review**. v. 18, n. 1, p. 30-44, 2001.
- TAVOLARO, P.; OLIVEIRA, C.A.F.; LEFÈVRE, F. Avaliação do conhecimento em práticas de hygiene: uma abordagem qualitativa. **Interface Comunicação, Saúde, Educação**. v. 9, n. 18, p. 243-254, 2006.
- TEIXEIRA, J.J.V.; LEFÈVRE, F. A prescrição medicamentosa sob a ótica do paciente idoso. **Revista Saúde Pública**. v. 35, n. 2, p. 207-213, 2001.
- TOMASCHUNAS, M.; KOHN, E.; BENNWITZ, P.; HINRICHS, J.; BUSCH-STOCKFISCH, M. Quantitative and qualitative variation of fat in model vanilla custard desserts: effects on sensory properties and consumer acceptance. **Journal of Food Science**. v. 78, n. 6, p. S894-901, 2013.
- UNFER, B.; BRAUN, K.; SILVA, C.P.; FILHO, L.D.P. Autopercepção da perda de dentes em idosos. **Interface Comunicação, Saúde, Educação**. v. 9, n. 18, p. 217-226, 2006.
- VAN KLEEF, E.; VAN TRIJP, H.C.M.; LUNING, P. Consumer research in the early stages of new product development: a critical review of methods and techniques. **Food Quality and Preference**. v. 16, p. 181-201, 2005.
- VERBEKE, W.; WEZEMAEL, L.V.; BARCELLOS, M.D.; KUGLER, J.O.; HOCQUETTE, J.; UELAND, O. et al. European beef consumers' interest in a beef eating-quality guarantee insights from a qualitative study in four EU countries. **Appetite**. v. 54, p. 289-296, 2010.
- VERBEKE, W.; PÉREZ-CUETO, F.J.A.; GRUNERT, K.G. To eat or not to eat pork, how frequently and how varied? Insights from the quantitative Q-PorkChains consumer survey in four European countries. **Meat Science**. v. 88, p. 619-626, 2011.
- XIANLIANG, L.; HONGYING, Y. The quantitative analysis on the individual characteristics of urban residents and their sport consumption motivation. **Physics Procedia**. v. 33, p. 2055-2063, 2012.

YEN, W.J.; LEWIS, N.M. MyPyramid-omega-3 fatty acid nutrition education intervention may improve food groups and omega-3 fatty acid consumption in university middle-aged women. **Nutrition Research**. v. 33, p. 103-108, 2013.

ZOELLNER, J.; KRZESKI, E.; HARDEN, S.; COOK, E.; ALLEN, K.; ESTABROOKS, P.A. Qualitative application of the theory of planned behavior to understand beverage consumption behaviors among adults. **Journal of the Academy of Nutrition and Dietetics**. v. 112, n. 11, p.1774-1784, 2012.

CAPÍTULO 2

CONSUMPTION OF NON-ALCOHOLIC BEVERAGES: A CROSS-CULTURAL STUDY BETWEEN BRAZIL AND PORTUGAL

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CONSUMPTION OF NON-ALCOHOLIC BEVERAGES: A CROSS-CULTURAL STUDY BETWEEN BRAZIL AND PORTUGAL

Short title: CONSUMPTION OF NON-ALCOHOLIC BEVERAGES

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ABSTRACT

A cross-cultural study was developed to evaluate the consumption of non-alcoholic beverages of physical activity practitioners in Brazil and Portugal. The cross-cultural study was performed using the transversal descriptive direct and exploratory research. Practitioners of physical activity from two fitness centers in Ribeirão Preto, SP, Brazil (n=127), and two fitness centers in Porto, Portugal (n=122), participated in the study. Data were collected using a structured questionnaire. The majority of the participants were 20 to 40 years old, with predominance of males among Portuguese and females among Brazilians. Mineral water was the most consumed beverage among Brazilian and Portuguese participants. The high consumption of fruit juice and nectar by Brazilians and ready to drink tea by Portuguese, more than four times a week, indicated the interest of practitioners of physical activity for beverages that favor health and quality of life. The physical activity practitioners did not know the functional food term.

Keywords: Non-alcoholic beverages; Sweetened beverages; Physical activity; Fitness centers; Functional food.

INTRODUCTION

The world consumption of industrialized non-alcoholic beverages increased 3.6% from 2003 to 2009. Only in 2009 the consumption of ready to drink non-alcoholic fruit-based beverages increased 5.3%, following the trend of consumption of beverages that offer health, convenience, flavor, innovation and pleasure (Carvalho, 2010; Ferrarezi et al., 2010). The Brazilian and Portuguese non-alcoholic beverage market is growing daily, with a production of 59 billion liters in 2010 and 2.136 million liters in 2012, respectively (Brazilian Association of Soft Drinks and Non-Alcoholic Beverages Industry, 2014; Portuguese Association of Non-alcoholic Beverages [PROBEB], 2014a).

The functional food market is also focused on the development of healthy and nutritional products, which provide well-being. The functional beverages, especially those fruit-based, are a

good option to improve the functional food market. Nowadays the market is focusing on the production of beverages that promote the reduction of cholesterol level, increase of antioxidant capacity and consumption of minerals, vitamins and isoflavones, besides beverages focused on specific needs of women, elderly, sportsmen, and others. The consumers' demand for *in natura* and functional food has been increased as a consequence to the search for good quality food and a healthier lifestyle (Sloan, 2012; Bleiel, 2010).

The practice of physical activity alongside a balanced diet is the pathway to a healthier lifestyle. Both physical activity and diet have been adopted as a health protection factor, for the improvement of blood pressure, lipid profile, osteoporosis, neurocognitive function, and others (World Health Organization, 2004).

Population aging and concern for environmental preservation and health impact on purchase decision, among other factors, contribute to improve the demand of specific and good quality products (Barbosa et al., 2010). Trends in food consumption are related to the tendency of individuals on modifying established habits. According to the Brasil Food Trends 2020, the real challenge of the food industry is to accurately identify reflexes, new consumption habits and the results of fast changes in society (Barbosa et al., 2010). The culture of a country is one of the most important characteristics that differentiate consumer behavior (Steenkamp, 2001). Understanding similarities and differences among countries is fundamental to evaluate the consumption habit of food and beverages (Barbosa et al., 2010; Orth and De Marchi, 2006; Orth and De Marchi, 2005; Moskowitz and Krieger, 1998).

The aim of this work was to perform a cross-cultural study between Brazilian and Portuguese practitioners of physical activity in fitness centers on the habit of consumption of non-alcoholic beverages.

METHODOLOGY

The cross-cultural study was performed using the transversal descriptive direct and exploratory

research. Practitioners of physical activity from two fitness centers in Ribeirão Preto, SP, Brazil, and two fitness centers in Porto, Portugal, participated in the study. The data were collected from August to September 2011 in Brazil and from April to May 2012 in Portugal. The fitness centers, which were chosen according to closeness to easy access avenues, had different types of physical activities, specific space for aerobic exercises, weight lifting and swimming, with no age or gender restriction. The practitioners of physical activity were approached at the entrance of the fitness centers, randomly, on weekdays at different times. The questionnaire was applied in a calm place without disturbing the fitness center's physical activity.

A convenience non probabilistic sampling with 127 Brazilian and 122 Portuguese volunteers was used (Malhotra, 2006). Volunteers accepted to participate and signed a free and clarified consent term, according to the Human Research Ethics Committee from University of Ribeirão Preto, SP, Brazil, and University of Porto, Portugal (Annex 1 and 2).

Data were collected using a structured questionnaire which addressed socio-demographic data such as gender, age, educational level, habit of consumption of non-alcoholic beverages, and knowledge about functional food (Appendix 1). The structured 9-point hedonic scale (9 = like extremely, 5 = neither like nor dislike, 1 = dislike extremely) was used to evaluate how the participants liked non-alcoholic beverages. The frequency of consumption was evaluated using a 5-point scale (5 = always; 3 = up to once a week; 1 = never). The choice of the non-alcoholic beverage types was based on the beverage availability at the supermarkets of Ribeirão Preto, SP, Brazil and Porto, Portugal. Only ready to drink refreshment was not found in the Portuguese market. The questionnaire was trans culturally adapted from Brazilian Portuguese to that of Portugal.

Data analysis was carried out using the SPSS for Windows version 20. Relative (%) and absolute (n) frequency were obtained to characterize population and habit of consumption of non-alcoholic beverages.

RESULTS AND DISCUSSION

Profile of physical activity practitioners

The cross-cultural study between Brazil and Portugal outlined the cultural relationship maintained over four centuries. Both countries share a common language (Portuguese), a predominant catholic religion and similar eating habits. Nowadays they have an economic, social, cultural, technical and scientific fortunate relationship, besides having cooperation and political diplomatic coordinating actions (Sousa et al., 2010).

The results of this study showed that the majority of the Brazilian participants were individuals aged 20 to 40 years old (70.0%), single (66.1%), females (54.3%), who lived with their families (80.3%), had educational level between completed high school and college graduate (66.1%), predominance of science and art professionals (52.0%), were employed at the research period (78.7%), and had monthly income of above five minimum wages (70.9%). In Portugal most of the participants were aged 20 to 40 years old (87.7%), single (87.7%), males (60.7%), who lived with their families or in a fraternity (84.5%), had educational level between completed high school and college graduate (84.5%), predominance of science and art professionals and students (81.1%), were unemployed during the research (51.6%), and had monthly income of one to five minimum wages (59.9%) (Table 1).

The profile of physical activity practitioners in fitness centers in Brazil was different from that of Portugal. 54.3% of the Brazilian participants were females and 40.5% males, while in Portugal males accounted to the highest proportion (60.7%). In Brazil, 58.2% of the participants were aged up to 29 years old compared to 82.8% in Portugal. The Brazilian participants aged 30 years old or more represented 41.7%, against 16.2% of the Portuguese participants. This can probably be related to the higher educational and income level of the Brazilian participants. The higher educational level is due to the longer period of study that can increase chances of having a more qualified occupation and consequently higher income. Most of the Brazilian claimed going to the fitness centers four to five times a week (59.0%), and the

Portuguese two to three times a week (61.5%). The frequency of Brazilians in fitness centers up to two years was of 45.7% compared to 52.0% in Portugal. 22.0% of the Brazilian participants attended fitness centers for more than ten years.

The Brazilian Institute of Geography and Statistics (IBGE) evaluated the access and use of services, the health conditions and risk factors, and protection of the population's health (physical activity, smoking, traffic and violence) in order to indicate the outlook of health in Brazil. It was found that 20.0% of the population did not practice any physical activities. Among the practicing ones (28.2%) there were many individuals under 30 years old (50.0%). The practice of physical activities in Brazil was directly correlated with the population's monthly income. About 50.0% of those who earned above five minimum wages practiced physical activities, while among those who earned less than one minimum wage the total was 20.0%. 47.4% of the Brazilian population practiced physical activities up to twice a week (IBGE, 2010). The practice of physical activities of the inhabitants of São Paulo, Brazil, was evaluated using a sample of 2.691 individuals. The frequency of practicing physical activities was higher for males between 12 and 29 years old, individuals with at least college educational level, and for income higher than six minimum wages (Sousa et al., 2013). Knuth et al. (2011) evaluated the practice of physical activities in Brazil based on the 2008 National Household Sample Survey. It was found that men (12.7%) from 14 to 54 years old (41.5%) and higher educational level (up to completed high school) were the most physically active.

The practice of physical activities in Portuguese fitness centers is recent, having started in 2005, explaining why it targets young individuals (75.4%). Older individuals are usually resistant to the "new", and are rooted in traditions (Viana, 2012). The European Commission researches (2010) showed that data concerning to physical activities of Portuguese people are close to the European average, indicating that 55.0% of the population had never practiced physical activity or practiced any type of sports. It also indicated that men exercise more than women, as observed in the present work. Only 9.0% of Portuguese people practiced physical

activities at least five times a week and 33.0% practiced at least once a week. About 13.0% of Portuguese people indicated that the high cost was one of the reasons which hindered them from practicing physical activities more frequently. The low weekly attendance of Portuguese participants in this research may be related to the cost. The northern European countries are more physically active than the southern ones. Portuguese presented the lowest frequency of physical activities (40.7%) among Europeans (Martínez-González et al., 2001).

Profile of consumption of non-alcoholic beverages

Figure 1 shows the participant's distribution according to how they liked non-alcoholic beverages. The Brazilian and the Portuguese participants claimed they liked freshly prepared juice with fruit (87.4%; 75.4%) and mineral water (89.0%; 64.0%) from very much to extremely. Brazilians and Portuguese liked carbonated soft drink (69.3%; 74.1%) and ready to drink juice and nectar (63.0%; 63.9%) from moderately to extremely. As of ready to drink tea, Brazilians claimed neither like nor dislike to like very much (46.5%) while the Portuguese claimed like from slightly to very much (68.5%). Brazilians and Portuguese claimed neither like nor dislike to like very much of isotonic (70.0%; 69.7%) and energy drink (63.8%; 59.8%) and neither like nor dislike to like moderately of juice prepared by concentrated juice (69.3%; 68.1%). Brazilians disliked from extremely to very much of powdered refreshment (24.7%), ready to drink refreshment (40.2%) and soy-based beverage (41.8%), while the Portuguese claimed dislike slightly to like slightly of powdered refreshment (61.5%), and neither like nor dislike to like moderately of soy-based beverage (42.5%).

The most consumed beverages by Brazilians and Portuguese, at least four times a week, were mineral water (70.9%; 64.8%), freshly prepared juice with fruit (29.1%; 4.9%), ready to drink juice and nectar (14.2%; 4.9%), carbonated soft drink (11.0%; 3.3%), soy-based beverage (8.7%; 3.3%), juice prepared by concentrated juice (6.3%; 1.6%), powdered refreshment (4.7%), isotonic (3.1%; 2.5%), ready to drink tea (1.6%; 10.7%) and energy drink (1.6%; 2.5%).

The Brazilians consumption profile differed from the Portuguese one, based on the high consumption frequency of non-alcoholic beverages, over four times a week. Mineral water was the most consumed beverage of both countries. The consumption of freshly prepared juice with fruit was five times higher among Brazilians and the consumption of ready to drink tea was ten times higher among the Portuguese. The consumption of carbonated soft drink and juice prepared by concentrated juice was almost four times greater and the consumption of ready to drink juice and nectar and soy-based beverage was almost three times greater among the Brazilians. The consumption of isotonic and energy drink was similar among Brazilians and Portuguese (Figure 2).

According to Popkin (2012) the consumption of sugar-sweetened beverages increased in the USA and in Europe until 2005. In the USA the trend of substituting sugar for sweeteners, promoted a reduction of caloric value in the beverages, especially in carbonated soft drinks. In Europe, particularly the Portuguese market showed a reduction of 24% of caloric value of non-alcoholic beverages between 2006 and 2012 (PROBEB, 2014b). Data from the 2008 Brazilian Family Budget Survey indicated that carbonated soft drink was the most consumed daily beverage *per capita* (IBGE, 2011). The consumption of sugar-sweetened beverages (carbonated soft drinks and sugar added beverages) leads to the increase of energetic ingestions, which is associated to weight gain and the development of chronic non-communicable diseases such as obesity, high blood pressure and diabetes (Wen et al., 2012). The presence of large carbonated soft drink companies, whose market is well consolidated, and recently started to commercialize ready to drink juice and nectar, aromatized water, energy drinks, refreshment, and others, is contributing to the increased consumption of carbonated soft drink and other sweetened beverages. Gómez et al. (2011) stated that the sweetened beverages companies have been supporting countless initiatives promoting health aiming at physical activities practice, trying to minimize the negative effects of its products. The consumption of non-alcoholic beverages without sugar contributes favorably to health and well-being. Besides acting on the hydration of

the organism, it is connected to a better performance of sportsmen and practitioners of physical activities. Furthermore, the non-alcoholic beverages can also influence the nutritional state due to the caloric contribution and being a source of micronutrients (Dennis et al., 2009; Han and Powell, 2013; Loose and Jaeger, 2012).

The high consumption of non-alcoholic beverages in Brazil and Portugal, at least four times a week, such as mineral water, freshly prepared juice with fruit, soy-based beverage, juice prepared by concentrated juice, isotonic and ready to drink tea, points to the current population's concern with health and quality of life. The ready to drink juice and nectar were not included because nectar is a diluted and sweetened beverage, prepared from concentrated juice, plus sugar and additives (Ferrarezi et al., 2013; Brazil, 2009). The results of the present work agree to those of the Brazil Food Trends 2020, indicating that the participants' search for healthy food for a healthier life (Barbosa et al., 2010). The high frequency of consumption of ready to drink juice and nectar and powdered refreshment, of four or more times a week, in Brazil and in Portugal, follows the trend of the consumption of food that offers convenience (Barbosa et al., 2010). In general, consumers don't know the difference among the types of non-alcoholic beverages in the market, which could influence on a healthier and more conscious choice (Ferrarezi et al., 2013a; 2013b).

The functional food term was known by 31.5% of the Brazilian participants, while 68.9% of the Portuguese stated not knowing what functional food was. Markovina et al. (2011) showed that 39.4% of Croatian young consumers stated knowing the term functional food. Practitioners of physical activity from Trinidad and India reported that 34.3% of those who were interviewed had already heard about the functional food term, and those who practiced physical activities three times or more a week (32.7%) were more accustomed with the functional food term (Badrie et al., 2007). Carrillo et al. (2013) reported that 47.0% of the Spanish consumers didn't know the functional food term. Oliveira and Cardoso (2010) analyzed the habits of consumption of functional food in young adults in two college institutions of Porto, Portugal.

51.5% of the participants stated they consumed functional food every day and 16.7% only once a week.

Despite the high consumption and the economic importance of non-alcoholic beverages there are few studies concerning the consumer's behavior in literature. Most studies are focused on the influence of the consumption of sweetened non-alcoholic beverages on health (Hedrick et al., 2013; Han and Powell, 2013; De Koning et al., 2011). To understand and quantify the consumption of non-alcoholic beverages in different populations and countries may contribute to identify the consumer profile and its impact in marketing. In this way, this work was essential to characterize the profile of consumption of non-alcoholic beverages of physical activity practitioners in Brazil and Portugal that afterwards were recruited to participate in a qualitative research to evaluate consumer expectation and use the results to suggest non-alcoholic functional beverages that meet the needs of consumers.

Many cross-cultural studies have been performed to understand the behavior of consumers in different countries, thus contributing to identify needs and food preferences. Onwezen et al. (2012) performed a cross-cultural study involving four European countries (Netherlands, Greece, Poland and Spain) to identify consumer segments based on the self-reported importance on the benefits of the main meals and snacks. The consumer segments were mainly identified according to the benefits related to health (39%) and convenience (27%). The consumer segments differ in relation to the importance they attribute to benefits across different moments and situations of consumption ($p < 0.001$) and across perceptions of healthy and unhealthy food ($p < 0.001$). Zampollo et al. (2012) evaluated visual preferences of plates and how they vary across cultures. A wide range variety of meals' photos were presented to adults from the USA, Italy and Japan to assess preferences for various plating arrangements. There was a consistent preference for three colors on a plate (USA $p < 0.001$; Italy $p < 0.01$; Japan $p < 0.001$) and three (USA and Japan $p < 0.001$) to four (Italy $p < 0.001$) components on a plate; however, there were diverging preferences regarding the preferred position of the featured main course,

how the items were organized, and whether they should be casually presented. The American and Italian consumers preferred disorganized ($p < 0.01$; $p < 0.001$, respectively) and casual ($p < 0.001$) plate designs, while empty plates were preferred in Japan and the USA ($p < 0.001$). Guerrero et al. (2009) evaluated the consumer's definition from the concept of traditional food products and the term innovation in six European countries (Belgium, France, Italy, Norway, Poland and Spain). Habit and natural, origin and locality, processing and elaboration, and sensory properties were identified as the concept of traditional foods. Novelty and change, variety, processing and technology, origin and ethnicity, and convenience emerged around the concept of innovation. Traditional food products were similarly perceived in all countries, while innovation was found to damage the traditional character of traditional food products. Holt et al. (2000) evaluated the perception and preference of different levels of sucrose (0, 5, 10 and 20%, w/v) in orange juice, custard and biscuit, and its relation with the intake of sugar and sweet foods in 69 Australian and 63 Malaysian university students. The Australians had higher average of liking ratings than the Malaysians for orange juice ($p < 0.01$) and biscuit ($p < 0.01$). Both the Australians and Malaysians preferred similar levels of sucrose in the juice (5%), custard (10%) and biscuit (10 and 20%). The frequency of consumption of sweet foods and beverages did not differ between the Malaysians and the Australians. Intakes of sugar were higher in sweetness liker consumers.

Cross-cultural studies allow to understand the similarities and differences between consumers in different countries to better evaluate the profile and habits of consumption of food and beverages. This type of work is an important tool when one intends to know different cultures, especially in marketing research aiming the development of products to meet the needs and expectations of consumers.

CONCLUSIONS

The profile of physical activity practitioners in fitness centers in Brazil and Portugal was

distinct. The majority of participants were 20 to 40 years old, with predominance of males among Portuguese and females among Brazilians. The Brazilian participants presented a higher educational level, higher income and a higher attendance to fitness centers than the Portuguese. The Brazilians' most consumed beverages were mineral water, freshly prepared juice with fruit, ready to drink juice and nectar and carbonated soft drink. In Portugal the most consumed beverages were mineral water and ready to drink tea. The frequency of knowledge about functional food was higher among Brazilian participants. Mineral water was the most consumed beverage among Brazilian and Portuguese participants. The high consumption of fruit juice and nectar by Brazilians and ready to drink tea by Portuguese, more than four times a week, indicated the interest of practitioners of physical activity in fitness centers for beverages that favor health and quality of life. The functional food term was unknown to the physical activity practitioners.

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Declaration of Interest

All authors declare that they have no conflicts of interest.

REFERENCES

- Badrie N, Reid-Foster S, Benny-Ollivierra C, Roberts H. 2007. Exercise enthusiasts, perceptions and beliefs of functional foods in Trinidad, West Indies. *Nutrition & Food Science* 37(5): 345-357.
- Barbosa L, Madi L, Toledo MA, Rego RA. 2010. As tendências da alimentação, in *Brasil Food Trends 2020*, L. Madi, A.C.P. Costa, & R.A. Rego (coord). São Paulo: Fiesp Ital; 39-48.

- Available at http://www.brasilfoodtrends.com.br/Brasil_Food_Trends/index.html [Accessed on 12 August 2013].
- Bleiel J. 2010. Functional foods from the perspective of the consumer: How to make it a success? *International Dairy Journal* 20:303-306.
- Brazil. Ministério da Agricultura, Pecuária e Abastecimento. Decreto n° 6.871, de 04 de junho de 2009. Regulamenta a Lei n° 8.918, 14 de julho de 1994, que dispõe sobre a padronização, a classificação, o registro, a inspeção, a produção e a fiscalização de bebidas. Available at <http://www.extranet.agricultura.gov.br/sislegis-consulta> [Accessed on 07 February 2013].
- Brazilian Association of Soft Drinks and Non-Alcoholic Beverages Industry. Consumption of all commercial beverages 2005-2010. Available at <http://www.abir.org.br/2011/10/24/dados-de-mercado-2011/> [Accessed on 08 January 2013].
- Brazilian Institute of Geography and Statistics [IBGE]. 2010. Um panorama da saúde no Brasil: Acesso e utilização dos serviços, condições de saúde e fatores de risco e proteção à saúde 2008. Available at http://bvsms.saude.gov.br/bvs/publicacoes/pnad_panorama_saude_brasil.pdf [Accessed on 20 July 2013].
- Brazilian Institute of Geography and Statistics [IBGE]. 2011. Pesquisa de orçamentos familiares 2008-2009: Análise do consumo alimentar pessoal no Brasil. Available at http://www.ibge.gov.br/home/estatistica/populacao/condicaodevida/pof/2008_2009_analise_consumo/pofanalise_2008_2009.pdf [Accessed on 20 July 2013].
- Carrillo E, Prado-Gascó V, Fizman S, Varela P. 2013. Why buying functional foods? Understanding spending behaviour through structural equation modeling. *Food Research International* (50): 361-368.
- Carvalho A. Global Market of Beverages 2010. Tetra Pak. 2010. Available at

-
- <http://www.valoronline.com.br/sites/default/files/alexandre.pdf> [Accessed on 08 January 2013].
- Dennis EA, Flack KD, Davy BM. 2009. Beverage consumption and adult weight management: A review. *Eating Behaviors* (10): 237-246.
- De Koning L, Malik VS, Rimm EB, Willet WC, Hu FB. 2011. Sugar-sweetened and artificially sweetened beverage consumption and risk of type 2 diabetes in men. *The American Journal of Clinical Nutrition* (93): 1321-1327.
- European Commission. 2010. Special Eurobarometer. Sport and physical activity. Directorate General Education and Culture. Available at http://ec.europa.eu/sport/library/documents/d/ebs_334_en.pdf [Accessed on 12 August 2013].
- Ferrarezi AC, Minim VPR, Dos Santos KO, Monteiro M. 2013a. Consumer attitude towards purchasing intent for ready to drink orange juice and nectar. *Journal of Nutrition & Food Science* 43(4): 304-312.
- Ferrarezi AC, Dos Santos KO, Monteiro M. 2013b. Consumer interpretation of ready to drink orange juice and nectar labeling. *International Journal of Food Science and Technology* 48(6): 1296-1302.
- Ferrarezi AC, Dos Santos KO, Monteiro M. 2010. Critical assessment of the Brazilian regulations on fruit juices, with emphasis on ready-to-drink fruit juice. *Brazilian Journal of Nutrition* (23): 667–677.
- Gómez L, Jacoby E, Ibarra L, Lucumí D, Hernandez A, Parra D, et al. 2011. Sponsorship of physical activity programs by the sweetened beverages industry: public health or public relations? *Revista Saúde Pública* 45(2): 423-427.
- Guerrero L, Guàrdia MD, Xicola J, Verbeke W, Vanhonacker F, Zakowska-Biemans S., Sajdakowska M, Sulmont-Rossé C, Issanchou S, Contel M, Scalvedi ML, Granli BS, Hersleth M. 2009. Consumer-driven definition of traditional food products and

- innovation in traditional foods. A qualitative cross-cultural study. *Appetite* 52: 345-354.
- Han E, Powell LM. 2013. Consumption patterns of sugar-sweetened beverages in the United States. *Journal of the Academy of Nutrition and Dietetics* 113(1): 43-53.
- Hedrick VE, Comber DL, Ferguson KE, Estrabooks PA, Savla J, Dietrich AM, Serrano E, Davy BM. 2013. A rapid beverage intake questionnaire can detect changes in beverage intake. *Eating Behaviors* 14: 90-94.
- Holt SHA, Cobiac L, Beaumont-Smith NE, Easton K, Best DJ. 2000. Dietary habits and the perception and liking of sweetness among Australian and Malaysian students: A cross-cultural study. *Food Quality and Preference* 11: 299-312.
- Knuth AG, Malta DC, Dumith SC, Pereira CA, Morais Neto OL, Temporão JG, Penna G, Hallal PC. 2011. Practice of physical activity and sedentarism among Brazilians: results of the National Household Sample Survey – 2008. *Revista Ciência e Saúde Coletiva* 16(9): 3697-3705.
- Loose SM, Jaeger SR. 2012. Factors that influence beverage choices at meal times. An application of the food choice kaleidoscope framework. *Appetite* 59: 26-836.
- Malhotra NK. 2006. Concepção de Pesquisa exploratória: Pesquisa qualitativa, in *Pesquisa de marketing: uma orientação aplicada*, Malhotra NK, (ed.). Porto Alegre: Bookman; 152-794.
- Markovina J, Cacic J, Kljusuric JG, Kovacic D. 2011. Young consumers' perception of functional foods in Croatia. *British Food Journal* 113(1): 7-16.
- Martínez-González MA, Varo JJ, Santos JL, Irala J, Gibney M, Kearney J, Martínez JA. 2001. Prevalence of physical activity during leisure time in the European Union. *Medicine & Science in Sports & Exercise* 33(7): 1142-1146.
- Moskowitz H, Krieger B. 1998. International product optimization: a case history. *Food Quality and Preference* 9(6): 443-454.
- Oliveira HS, Cardoso PR. 2010. Atitudes e hábitos de consumo de alimentos funcionais – um

- estudo exploratório. *Cadernos de Estudos Mediáticos* 7: 83-94.
- Onwezen MC, Reinders MJ, Van der Lans IA, Sijtsma SJ, Jasiulewicz A, Guardia MD, Guerrero L. 2012. A cross-national consumer segmentation based on food benefits: The link with consumption situations and food perceptions. *Food Quality and Preference* 24: 276-286.
- Orth UR, De Marchi R. 2005. Advertising's influence on product experience and purchase intention. *Fruit Processing* Nov/Dec: 372-376.
- Orth UR, De Marchi R. 2006. Packaging design sells. Or doesn't it? *Fruit Processing* Jan/Feb: 14-17.
- Popkin BM. 2012. Sugary beverages represent a threat to global health. *Trends in Endocrinology and Metabolism* 23(12): 591-593.
- Portuguese Association of Non-alcoholic Beverages [PROBEB]. Sector: Market and Statistics. 2014a. Available at <http://www.probeb.pt/conteudo/Mercado-e-estat%C3%ADsticas/-/47> [Accessed on 14 March 2014].
- Portuguese Association of Non-alcoholic Beverages [PROBEB]. Health and lifestyles. 2014b. Available at <http://www.probeb.pt/conteudo/Boas-Praticas/-/96> [Accessed on 14 March 2014].
- Sloan AE. 2012. Top 10 Functional Food Trends. *Food Technology* 4: 24-41.
- Sousa F, Santos P, Amorim P. 2010. As relações Portugal-Brasil no século XX. Porto, Portugal: CEPESE.
- Sousa CA, César CLG, Barros MBA, Carandina L, Goldbaum M, Marchioni DML, Fisberg RM. 2013. Prevalence of leisure-time physical activity and associated factors: a population-based study in São Paulo, Brazil, 2008-2009. *Cadernos de Saúde Pública* 29(2): 270-282.
- Steenkamp JBEM. 2001. The role of national culture in international marketing research. *International Marketing Review* 18(1): 30-44.

- Viana V. 2012. Crescimento das academias de ginástica em Portugal. (Personal communication). Porto, Portugal.
- Zampollo F, Wansink B, Kniffin KM, Shimizu M, Omori A. 2012. Looks good enough to eat: How food plating preferences differ across cultures and continents. *Cross-Cultural Research* 46: 31-49.
- Wen SX, Ling LA, Qian Z, Qi HX, Ming DS, Jun MA, Fa XG, Ying L, Wei GH, Lin D, Yu LT, Sheng MG. 2012. Report on childhood obesity in china (9): Sugar-sweetened beverages consumption and obesity. *Biomedical and Environmental Sciences* 25(2): 125-132.
- World Health Organization. 2004. Global strategy on diet, physical activity and health. Available at http://www.who.int/dietphysicalactivity/strategy/eb11344/strategy_english_web.pdf [Accessed on 27 August 2013].

Table 1. Socio-demographic characteristics of physical activity practitioners in fitness centers in Ribeirão Preto, SP, Brazil and Porto, Portugal.

	Answer frequency (%)	
	Brazil n=127	Portugal n=122
Gender		
Female	54.3	39.3
Male	45.7	60.7
Age (in years)		
< 20	10.2	7.4
20 + 30	48.0	75.4
30 + 40	22.0	12.3
40 + 50	14.2	3.3
≥50	5.5	1.6
Occupation*		
Science and arts professionals	52.0	34.4
Students	18.9	46.7
Market sellers and service lenders	11.0	2.5
Administrative workers	3.1	6.6
Production of good and service workers	0.8	0.8
Leaders in general	9.4	1.6
High school level technicians	0.0	5.7
Ill defined occupations	4.7	1.6
Employment		
Yes	78.7	48.4
No	21.3	51.6
Marital status		
Single	66.1	87.7
Married	27.6	10.7
Divorced/widowed	6.3	1.6
Educational level		
Finished middle school/up to the 9th grade	5.5	0.8
Completed high school/from 10th to 12th grades	29.9	52.5
College graduate	36.2	32.0
Postgraduate	28.3	14.8
Housing		
House/ apartment with family	80.3	60.7
Fraternity (house/apartment/rented room with friends)	3.1	23.8
House/apartment/room (alone)	15.7	15.6
Pension/hostel/hotel	0.8	0.0
Monthly income		
Less than 1 MW ¹ / < 475 Euros ²	1.6	19.7
More than 1 to 2 MW ¹ /More than 475 to 950 Euros ²	4.7	27.9
More than 2 to 5 MW ¹ /More than 950 to 2.375 Euros ²	22.8	32.0
More than 5 a 10 MW ¹ /More than 2.375 to 4.750 Euros ²	30.7	17.2
More than 10 MW ¹ /More than 4.750 Euros ²	40.2	3.3

*Occupation rating according to IBGE (2011a); 1: Brazil; 2: Portugal; MW: Minimum Wage (Reference value in Brazil: R\$ 545,00 and Portugal: €475,00; Change value of Euro R\$ 2,65). Currency conversion. **Banco Central do Brasil**. Available at: <http://www.bcb.gov.br/pec/conversao/conversao.asp>. Accessed on 27 May 2013.

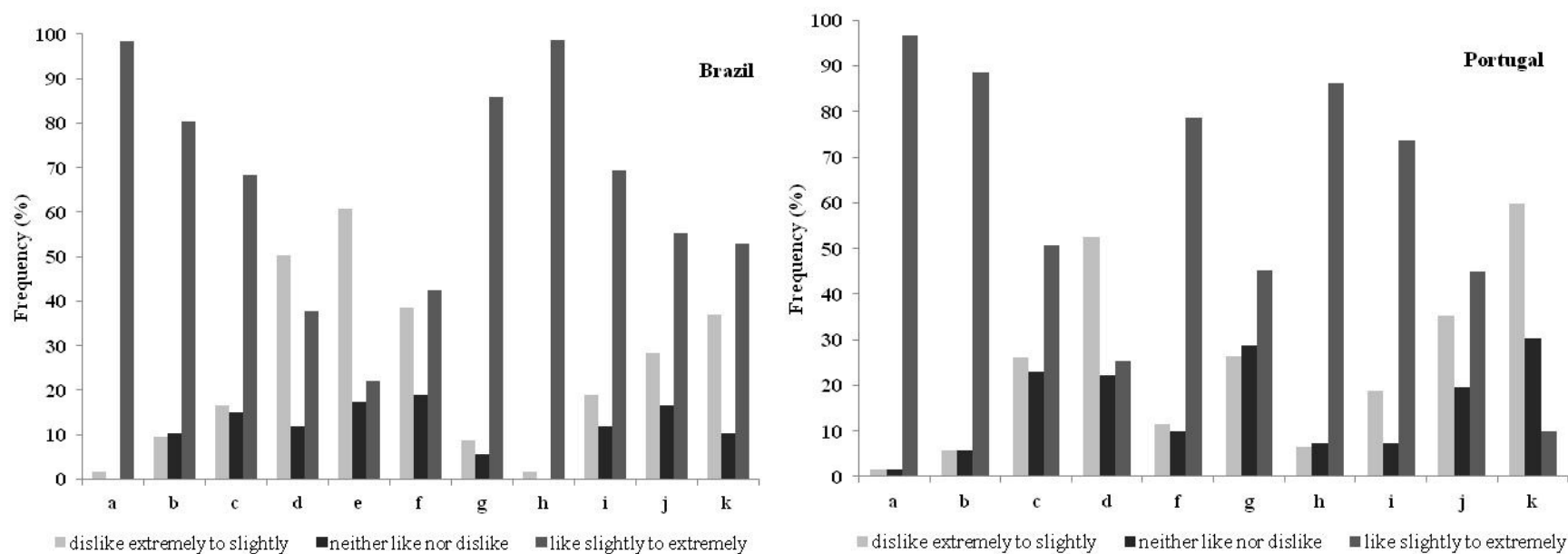


Figure 1. Participant’s distribution according to how they liked non-alcoholic beverages. Ribeirão Preto, SP, Brazil (n=127) and Porto, Portugal (n=122). a-Freshly prepared juice with fruit; b-Ready to drink juice and nectar; c-Juice prepared by concentrated juice; d-Powdered refreshment; e-Ready to drink refreshment; f-Ready to drink tea; g-Isotonic; h-Mineral water; i-Carbonated soft drink; j-Energy drink; k-Soy-based beverage.

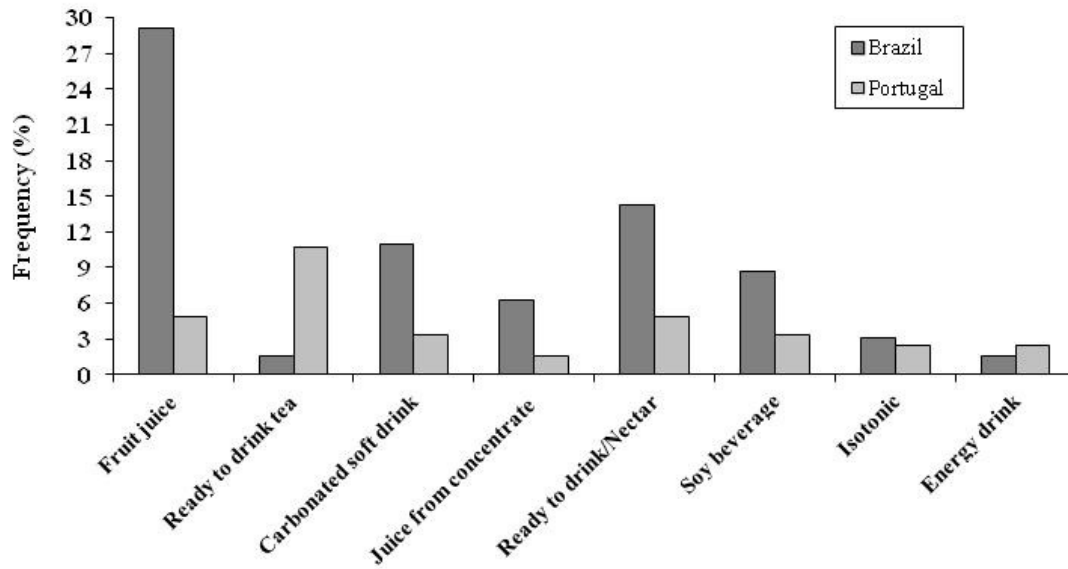


Figure 2. Profile of consumption of non-alcoholic beverages, over four times a week, of physical activity practitioners in fitness centers in Ribeirão Preto, SP, Brazil and Porto, Portugal.

CAPÍTULO 3

CONSUMER PERCEPTION OF FUNCTIONAL FOODS IN BRAZIL AND PORTUGAL

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Consumer perception of functional foods in Brazil and Portugal

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Abstract

The objective of this study was to establish criteria to apply the Discourse of the Collective Subject and evaluate the perception of non-alcoholic beverages consumers of functional foods in Brazil and Portugal. Individuals interviewed in Brazil (n=50) and Portugal (n=50), between 20 and 40 years old who liked and consumed non-alcoholic beverages, participated in the study. Participants with nutrition or food-related diseases were excluded. The main category about functional food for the Brazilian and Portuguese was related to the idea of beneficial food to the organism. The category related to the idea of food with specific functions was important in Portugal, though it was less prevalent among Brazilians. The majority of the participants reported to know what functional food is. The participants stated that functional food has properties and specific functions that promote health benefits. They stated that functional food should be consumed daily in specific quantities in order to achieve health benefit effects.

Keywords

Qualitative research; discourse of the collective subject; consumer perception; functional food; semi-structured interviews

1. Introduction

Consumers are looking for food that is safe, convenient, nutritive, and healthy, that meets their needs and expectations. Many things influence the process by which consumers accept or reject food, such as brand, price, and packaging. Sensory characteristics also influence their choice, such as color, aroma, flavor, texture and others. Social, economic, biological, and sociological factors are influential as well. This process is very dynamic and varies quite a bit. This is not just because of the influence of individuals within a group, but also among the same individuals in different contexts and at different periods of time (Ferrarezi et al., 2013; Iop et al., 2006; Jaeger, 2006). Qualitative and quantitative studies have been used in order to better understand

consumer behavior. They evaluate opinions, expectations, attitudes, and perception about food and beverages. Qualitative research has an exploratory character, uses few individuals, and generates descriptive information that is able to identify consumer behavior. Quantitative research measures consumer behavior and generally utilizes structured questionnaires with objective questions. The answers to the questions are generally numerical. A larger number of participants, compatible with statistical analysis, are used for quantitative analysis than qualitative analysis (Malhotra, 2006; Barrios & Costell, 2004).

Qualitative research applies to the study of history, solutions, representations, beliefs, perceptions, and opinions. This research deals with the universe of meanings, motives, hopes, beliefs, values, and attitudes that make up the perception and comprehension of the processes and phenomena inherent to consumer attitude that can not be quantified. It is the result of interpretation that individuals make about how they live, feel, and think (Minayo, 2010). The objective of qualitative research is to understand why specific factors affect the buying decision and consumption of products. Qualitative research has been used more and more frequently in market research, marketing research, and product development research (Malhotra, 2006; Barrios & Costell, 2004). The in-depth interview and focus group are the most common techniques used to investigate food consumer (Barrios & Costell, 2004).

Quantitative research is able to objectively measure consumer perception, opinion, and attitude about food and beverages. Data collection is generally carried out with closed questions. Responses are chosen according to a specific set of choices in which the individual chooses one or more options. The data later undergoes statistical analysis (Cortés et al., 2013; Xianliang & Hongying, 2012; Verbeke et al., 2011; Verbeke et al., 2010; Mucci et al., 2004). In addition, questionnaires are used to evaluate consumption habits and how often the participants consume food and beverages, conjoint analysis to evaluate the decision to buy and consume, and sensory analysis to evaluate acceptance and preference (Yen & Lewis, 2013; Ferrarezi et al., 2013; Tomaschunas et al., 2013; Ares et al., 2010). Depending on the objective of the research, the

joint use of qualitative and quantitative techniques is needed to improve comprehension and explain consumer behavior (Barrios & Costell, 2004).

The Discourse of the Collective Subject (DCS) uses a quali-quantitative approach combining opinions, perception, preferences, attitudes and decisions of the participants in a discourse. The DCS allows opinions, desires, beliefs, attitudes, necessities, motives and behavior of a population to be identified, interpreted and evaluated. Individual or group interviews are carried out that are transcribed and then categorized into a single discourse. The research preserves the nature of the reasoning and qualitative nature of the opinion from the beginning to the end and makes the quantitative dimension associated with representativeness and generalization of the results inseparable, which is an advance in opinion research. The result is the statement of the individuals in the form of a discourse. Since thought is essentially discursive, it can only really be reached from the opinions of the individuals in a specific population. Open-ended questions allow the answers to be expressed freely, which generates the viable discourse. Closed questions do not represent the expression of thoughts, but the expression of agreement to a pre-existing thought, and is considered insufficient to identify attitudes and perceptions (Lefèvre & Lefèvre, 2010; Lefèvre et al., 2009; Lefèvre & Lefèvre, 2003).

The DCS requires criteria that establish clear and specific limits for the participants and the approach used to evaluate consumer perception of food and beverages. The criteria will determine which individuals will participate in the study and how the interviews will be carried out. The selection of participants in DCS is fundamentally important because various individuals need to participate to produce different opinions. Participants must be chosen using criteria of inclusion and exclusion and must be representative of the target public. How complete the responses are is more important in DCS than the number of people interviewed. All of the opinions of the population being studied should be considered in the discourse. Individual interviews are often used in DCS studies so that the participant can give their opinion without

any type of interference (Lefèvre & Lefèvre, 2010).

This work aimed to detail the tools used to apply the DCS and evaluate the perception of non-alcoholic beverages consumers of functional foods in Brazil and Portugal.

2. Method

The participants were recruited according to previous research in order to identify consumers of non-alcoholic beverages in fitness centers in Riberão Preto, SP, Brazil and in Porto, Portugal (Ferrarezi et al., 2014). The individuals who regularly did physical exercise in fitness centers volunteered to answer a structured questionnaire containing questions about socio-demographic data and consumption habit of non-alcoholic beverages (Appendix 1). Participants were selected using criteria of inclusion and exclusion. Inclusion criteria were based on the predominant age group and how much the individuals liked and consumed non-alcoholic beverages. Individuals who had nutrition or food-related diseases were excluded. After selection, the participants were invited to take part in interviews. There were 50 participants in Brazil and 50 participants in Portugal. The interviews took place between October and December 2011 in Brazil and between June and August 2012 in Portugal.

A semi-structured interview with open-ended questions was carried out individually using a voice micro-recorder. The interviews lasted around 20 minutes and were transcribed afterwards. A pilot study was carried out with 10 individuals before the final version of the question script was applied in order to ensure that the research instrument was appropriate and to train the interviewer. There were no alterations to the original script because the questions were found to be clear and they met the needs of the study. The purpose of the questions in the script was to identify the consumption profile of non-alcoholic beverages and perception of functional foods. Participants signed a free and clarified consent term as described by the Human Research Ethics Committee (University of Ribeirão Preto, SP, Brazil, and University of Porto, Portugal) (Annex 1 and 2).

Data were analyzed using the DCS technique. The consumption profile of non-alcoholic beverages and perception of functional foods was evaluated according the key expressions (KE), central idea (CI), and discourse. The KEs are pieces, extracts or literal transcriptions highlighted by the researcher that reveal the essence of the statement or more precisely reveal the discursive content of the segments that the statement is divided into and that corresponds to the research questions. The KE is the raw material of the DCS. The CI is a term or linguistic expression that synthetically, precisely, and faithfully reveals and describes the feelings of each of the statements analyzed and of each homogenous KE set which is going to lead to the DCS. The DCS is a discursive synthesis retyped in the first person singular made up of the KEs that have the same CI (Lefèvre & Lefèvre, 2010). QUALIQUANTISOFT® software was used to obtain the DCS.

3. Results and Discussion

The physical activity practitioners in fitness centers in Brazil and Portugal were characterized by their socio-demographic profile and habit of consumption of non-alcoholic beverages based on previous recruitment (Ferrarezi et al., 2014).

Inclusion criteria to choose the participants were obtained from the profile of the individuals recruited. They included individuals between 20 and 40 years old, 70.0% of consumers recruited in Brazil and 87.7% of those recruited in Portugal, that liked non-alcoholic beverages at least slightly and consumed it at least three times a week. Individuals who had nutrition or food-related diseases were excluded since their dietary restrictions might have specific needs and expectations. The health conditions included obesity, diabetes, high blood pressure and high cholesterol.

Socio-demographic data such as gender, educational level and age group, and others, are used to characterize the consumers. The literature reveals that women tend to consume more functional food than man because they express more interest in healthy food and in taking care

of their health in general. Many studies have reported that older consumers include functional food in their diet, although others show that there are younger consumers with a positive opinion of buying functional food. In general, older consumers try to find functional food that has the purpose of preventing disease, while younger consumers are interested in food that improves physical performance, replacing vitamins and minerals and/or increasing energy. Higher levels of education also seem to influence consumption of functional food, though it isn't yet possible to generalize about the profile of these consumers (Carrillo et al., 2013; Markovina et al., 2011; Ares et al., 2009; Krystallis et al., 2008; Herath et al., 2008; Urala, 2005). In this study, only the most prevalent age category was considered for selecting participants.

Inclusion criteria must consider the ability of those being interviewed to express their opinions about the object of the study easily and clearly. When the group is more homogenous, it is easier to find out the opinion of the group (Vannoppen et al.; 2001; Grunert & Grunert, 1995). In research using DCS, the individuals must be able to express judgment, opinions, expectations and arguments (Lefèvre & Lefèvre, 2010). For this reason, the habit of consumption of non-alcoholic beverages was one of inclusion criteria in this study.

After clarifying the inclusion and exclusion criteria, the individuals chosen were invited to participate in interviews. All of the individuals that expressed interest in participating were interviewed, making up the sample group in this study: 50 in Brazil and 50 in Portugal. Saturation criteria to determine the number of interviews are not recommended in DCS, though they are often used in qualitative studies (Guest et al., 2006). One of the reasons for this is that data collection and analysis are separate steps in DCS (Lefèvre & Lefèvre, 2010).

During the interviews the participants were initially encouraged to respond about the kinds of beverages that they consumed throughout the day, describe their favorite flavors, and when they drank them during the day. The initial questions were used to introduce the interview and familiarize the participant with the subject to later ask about the perception of the participants concerning functional foods including beverages (Figure 1).

Figure 2 shows the profile of non-alcoholic beverages consumption. All of those interviewed in Brazil and Portugal claimed to drink mineral water and fruit juice on a regular basis. More than half of Brazilians consumed carbonated soft drink. Brazilians consumed it more often than the Portuguese. Portuguese consumed more than 20 times as much tea as Brazilians. Less than 20% of the participants claimed to consume soy-based beverage, coconut water, isotonic and energy drink. Only Brazilians consumed soy-based beverage and coconut water. Consumption of isotonic and energy drink was 5 times greater in Brazil than in Portugal. All of the beverages were consumed daily.

Mineral water, fruit juice and carbonated soft drink were consumed during meals. Ready to drink tea, tea freshly prepared, soy-based beverage, coconut water, isotonic and energy drink were not consumed along with meals. Participants in Brazil preferred orange (68%), grape (38%), lemon (32%) and passion fruit (26%) flavored beverages, while participants in Portugal preferred orange (54%), mango (36%), peach (34%), herbs and berry (30%) and lemon (28%) flavors. Greater preference for black and green tea, mint, peppermint, and berry tea was observed among participants in Portugal and this seems to be linked to habitual consumption of tea by the Portuguese and the greater availability of berry-flavored beverages in the country during the research period.

Table 1 shows the CIs and the categories that gave rise to them in the responses obtained in relation to the perception of functional food of the participants. The categories are represented by a lower-case letter. They correspond to a CI that came up in the responses, followed by the number of individuals that made up the category.

Category A is the prevalent CI category among Brazilians, with 22 participants. The idea is that functional food is beneficial to the organism. This was also the prevalent idea in Portugal, with 18 participants. The idea among Brazilians of food that is beneficial to the organism is shown in this discourse: *“I think that functional food is one that aids the functions of the organism. It is beneficial and leads to improved health. Every food has a function, but functional*

food is one that is more beneficial than [regular] food. Functional food can replace energy, hydrate, accelerate the metabolism, etc., improving the function of the organism in day-to-day life. I don't know much about the foundations of the subject, but I know that green tea is thermogenic, that it accelerates the metabolism, it helps lose fat, but it doesn't mean the person doesn't have follow a balanced diet and do exercise. I try to eat salmon, for example, which contains Omega-3 or even oilseeds to control cholesterol level. I also consume a lot of oats, granola, açai, and cereal bars. I do like all these types of food that aid health, improve my digestion, and make everything work better. I don't know much about functional food, I don't have the background to discuss this, but I think it is food that has the property of improving health". The discourse of participants in Portugal for category A related to health benefits that functional food offers to the organism was: *"Functional food has some health benefits, such as increasing intestinal flora, keeping us hydrated and having a vital function in our organism. I think that prebiotics and probiotics help the function of the bowels, some food or beverages can aid in vitamin deficiency and can help, for example, increase supply of protein and minerals to help us meet our objectives for physical exercise, as well as promote well-being in general. It is food that is available during the normal day, that is, it's part of our diets, like meat, fish, fruit, fiber, and so on. That's my opinion of what functional food is".*

The discourse of the participants in Brazil and Portugal confirms they know what functional food is. They define functional food according to the American Dietetic Association (ADA) and Functional Food Science in Europe (FUFOSE) (International Life Sciences Institute (ILSI), 2009). Participants in Brazil know the importance of functional food and their health benefits. They are aware of the need for a balanced diet and healthy living habits such as doing physical exercise. The Brazilians state that functional food is part of their diets because of the health benefits. Participants in Portugal also know the importance of functional food and the health benefits it has. They reported many functional foods and even mentioned functional beverages. Participants in Portugal consider that functional food is part of their daily diets, such as fruit and

fish, although they have been mistaken to consider meat as functional food and fiber as food.

Category B is related to the idea of food with specific functions. It was prevalent in Portugal, mentioned by 17 participants, though it came up in fewer of the responses of participants in Brazil, 7 participants. Responses of participants in Brazil generated this discourse: *“Functional food is food with specific functions that when consumed in specific quantities, protects, reduces risks of some diseases and benefits the organism, depending on its properties and the compounds that it contains. It is food such as green tea, tomatoes and carrots which people consume specifically to improve the organism. In my opinion, all food is functional”*. The discourse of the participants in Portugal was: *“Functional food is food that has a specific function that improves the function of the organism. I think that any food is functional food, such as vegetables, fruit, and food with higher levels of vitamins and protein. They are indispensable in our day-to-day lives and we should eat them daily in order to get the health benefit”*.

The discourse of the participants in Brazil and Portugal confirms that they know what functional food is. Participants in Brazil stated that functional food has specific properties and has to be consumed in specific quantities in order for one to achieve health benefit effects. Participants in Portugal stated that functional food has to be consumed daily to promote health benefits. Both participants in Brazil and Portugal consider that all food is functional, which is a misconception since not all food has a specific function that is able to have beneficial effects on the health.

In general, participants' perception of functional food was in line with the definition of the ADA and FUFPOSE. According to FUFPOSE, functional food is capable of acting on and benefiting one or more target functions in the organism as well as having appropriate nutrition that makes them relevant in improving the state of health and well-being and/or reducing the risk of disease (ILSI, 2009). According to the ADA (2009), functional food includes whole, fortified, enriched or improved food that when consumed regularly as part of a balanced diet and in the

correct quantities is able to have beneficial effects on the health. Brazilian legislation does not include a definition of functional food (Brazil, 1999a, 1999b).

Category C was related to the lack of knowledge of participants in Brazil (n=8) and Portugal (n=15) about functional food. It didn't generate a discourse since the people being interviewed did not express opinions (Table 1). In Brazil two more categories came up in the participants' answers. Category D, with 7 participants, dealing with food with required nutrients that are needed by the human organism, generated the following discourse: "*Functional food provides the required levels of protein, carbohydrates, and fat and doesn't contain preservatives or artificial coloring*". Category E contained 6 participants. It was related to healthy and natural food and produced this discourse: "*Functional food is natural, healthy food such as fruit, vegetables and soy*". This discourse shows that these respondents in Brazil do not know what functional food is, since they state that it is food with basic nutritional roles inherent to chemical composition, such as carbohydrates, fat and protein, without additives. The participants also state that natural and healthy food is part of the nature of the food, such as fruit and vegetables. From a wider standpoint, natural food refers to food obtained from nature that does not contain synthetic substances or artificial additives (Ferreira, 2009). Food that has been processed that has not undergone any alteration to its composition, for example fruit juice or pasteurized milk, are also considered natural (Ferreira, 2009). In addition, participants did not state that functional food has properties and specific functions that promote health benefits.

The majority of the participants in Brazil (n=29) and Portugal (n=35) know what functional food is. The participants specifically associated the functional food term with naturally functional food, such as fruit, vegetables, oats, soy, salmon, oilseed and green tea. Enriched or fortified food were not mentioned as being functional food, such as yogurt with probiotics, Omega-3-enriched margarine, iron-enriched milk, water with high concentrations of vitamin B and C or food enriched with fructooligosaccharide (FOS) (Bleiel, 2010; Siró et al., 2008). There are practically no functional beverages available on the market in Brazil and Portugal, which

shows that this market has significant growth potential.

Consumer perception of functional food was evaluated by the Spanish Ministry of Agriculture, Food and the Environment (2004) by means of interviews with individual Spanish consumers. 30.0% of the people interviewed didn't know the functional food term, but after it was defined by the interviewer, consumers identified some food as functional food, such as calcium-enriched milk, yogurt with probiotics, cereal, etc., suggesting that even though the consumers did not know the functional food term, they probably knew some kinds of functional food. Barrios et al. (2008) used the focus group technique to evaluate Spanish consumer perception of functional food. Only 25% of the people interviewed had heard the term and the majority defined functional food as having some nutrient added to make it healthier. After a brief explanation by a moderator of the functional food focus group, those being interviewed began to talk about food such as yogurt with added probiotics, and vitamin-enriched juice. Landstrom et al. (2009) evaluated Swiss consumer perception of functional food using focus groups. The participants stated that they did not consume functional food, emphasizing that this food is for people with specific dietary needs, such as diabetes or high cholesterol. In the opinions of the participants, functional food is being used to supply nutrients due to a lack of balanced nutrition and compensate for an unhealthy life style (Landstrom et al., 2009). Landstrom et al. (2007) used a focus group to evaluate the perception of Swiss nutritionists, nurses, and doctors of functional food and to evaluate their willingness to recommend this food to their patients. Doctors and nurses were more skeptical about functional food and its health benefits than nutritionists. Nutritionists state that they are more willing to recommend functional food to their patients than doctors and nurses. Nutritionists were aware of the physiological effects of functional food and this may have influenced their positive attitude towards this type of food.

In general, the literature shows that consumers are not familiar to the functional food term, though some types of functional food are known (Landstrom et al., 2009; Barrios et al., 2008;

Landstrom et al., 2007; Spanish Ministry of Agriculture, Food and the Environment, 2004). It is worth repeating that the studies available in literature have not used DCS, which aggregates the exploratory and discursive character with the quantitative dimension to evaluate perception of consumers about functional food. DCS was able to evoke and show the opinion, interpretation and knowledge of the consumer about functional food and the type of food consumed. It allowed for the perception of consumers of non-alcoholic beverages in Brazil and Portugal to be evaluated.

Knowledge of functional food and its benefits could propel the introduction of functional food and beverages into the market. According to ILSI (2009), for functional food and the components of functional food to become attractive to the consumer, all of the segments involved, that is, retail, growers, educators, and the government, as well as consumers, should be well informed about it, especially about the inherent benefits. Clarifying the health benefits that come from functional food to the consumer will accelerate the development of new food and beverages, and consequently, contribute to healthier lifestyles.

4. Conclusion

The inclusion and exclusion criteria, semi-structured individual interview, script, central idea and key expressions established were imperative to evaluate the consumer perception of functional foods in Brazil and Portugal. The main category about functional food for the Brazilian and Portuguese was related to the idea of beneficial food to the organism. The majority of the participants reported to know what functional food is. The participants claimed that functional food has properties and specific functions that promote health benefits. They stated that functional food should be consumed daily in specific quantities in order to achieve health benefits. The participants specifically associated the functional food term with naturally functional food, such as fruit, vegetables, oats, soy, salmon, oilseed and green tea.

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References

- American Dietetic Association*. (2009). Position of the American Dietetic Association: Functional Foods. *Journal of the American Dietetic Association*, 109, 735-746.
- Ares, G., Besio, M., Giménez, A. & Deliza, R. (2010). Relationship between involvement and functional milk desserts intention to purchase. Influence on attitude towards packaging characteristics. *Appetite*, 55, 298-304.

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- Ares, G., Giménez, A. & Gámbaro, A. (2009). Consumer perceived healthiness and willingness to try functional milk desserts. Influence of ingredient, ingredient name and health claim. *Food Quality and Preference*, 20, 50-56.
- Barrios, E.X., Bayarri, S., Carbonell, I. *et al.* (2008). Consumer attitudes and opinions toward functional foods: a focus group study. *Journal of Sensory Studies*, 23, 514-525.
- Barrios, E.X. & Costell, E. (2004). Review: Use of Methods of Research into Consumers' Opinions and Attitudes in Food Research. *Food Science and Technology International*, 10, 359-71.
- Bleiel, J. (2010). Functional foods from the perspective of the consumer: How to make it a success? *International Dairy Journal*, 20, 303-306.
- Brazil. (1999a). Brazilian National Health Surveillance Agency. Resolução RDC Nº 18, de 30 de abril de 1999. Aprova o Regulamento Técnico que estabelece as diretrizes básicas para análise e comprovação de propriedades funcionais e ou de saúde alegadas em rotulagem de alimentos, constante do anexo desta portaria. *Official Gazette* 03 may 1999.
- Brazil. (1999b). Brazilian National Health Surveillance Agency. Resolução RDC Nº 19, de 30 de abril de 1999. Aprova o Regulamento Técnico de procedimentos para registro de alimento com alegação de propriedades funcionais e ou de saúde em sua rotulagem. *Official Gazette* 03 may 1999.
- Carrillo, E., Prado-Gascó, V., Fiszman, S. *et al.* (2013). Why buying functional foods? Understanding spending behaviour through structural equation modeling. *Food Research International*, 50, 361-368.
- Cortés, D.E., Millán-Ferro, A., Schneider, K. *et al.* (2013). Food purchasing selection among low-income, spanish-speaking latinos. *American Journal of Preventive Medicine*, 44, S267-273.
- Ferrarezi, A.C., Minim, V.P.R., Dos Santos, K.O. *et al.* (2013). Consumer attitude towards purchasing intent for ready to drink orange juice and nectar. *Nutrition and Food Science*,

43, 304-312.

- Ferrarezi, A.C., Viana, V. & Monteiro, M. (2014). Consumption of non-alcoholic beverages: a cross-cultural study between Brazil and Portugal. *Journal of Consumer Behaviour*, [Submitted].
- Ferreira, A.B.H. (2009). Novo dicionário Aurélio da língua portuguesa. Rio de Janeiro, RJ: Nova Fronteira.
- Grunert, K.G. & Grunert, S.C. (1995). Measuring subjective meaning structures by the laddering method. Theoretical considerations and methodological problems. *International Journal of Research in Marketing*, 12, 209-225.
- Guest, G., Bunce, A. & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field Methods*, 18, 59-82.
- Herath, D., Cranfield, J. & Henson, S. (2008). Results of cluster analysis of the 2006 survey of Canadians' demand for food products supporting health and wellness. *Appetite*, 51, 256-265.
- International Life Sciences Institute. (2009). Functional foods, from science to health and claims. *ILSI Europe Concise Monograph Series*, 49 p.
- Iop, S.C.F., Teixeira, E. & Deliza, R. (2006) Consumer research: extrinsic variables in food studies. *British Food Journal*, 108, 894-903.
- Jaeger, S. (2006). Non-sensory factors in sensory science research. *Food Quality and Preference*, 17, 132-144.
- Krystallis, A., Maglaras, G. & Mamalis, S. (2008). Motivations and cognitive structures of consumers in their purchasing of functional foods. *Food Quality and Preference*, 19, 525-538.
- Landstrom, E., Hursti, U.K.K. & Magnusson, M. (2009). Functional foods compensate for an unhealthy lifestyle. Some Swedish consumers' impressions and perceived need of functional foods. *Appetite*, 53, 34-43.

- Landstrom, E., Sidenvall, B., Hursti, U.K.K. *et al.* (2007). Health-care professionals' perceived trust in and willingness to recommend functional foods: A qualitative study. *Appetite*, 48, 241-247.
- Lefèvre, F. & Lefèvre, A.M.C. (2003). *O discurso do sujeito coletivo*. Um novo enfoque em pesquisa qualitativa (Desdobramentos). Caxias do Sul, RS: Educ.
- Lefèvre, F. & Lefèvre, A.M.C. (2010). *Pesquisa de representação social*. Um enfoque quali-quantitativo. Brasília, DF: Liber Livros.
- Lefèvre, F., Lefèvre, A.M.C. & Marques, M.C.C. (2009). Discourse of the collective subject, complexity and self-organization. *Ciência & Saúde Coletiva*, 14, 1193-1204.
- Malhotra, N.K. (2006). Concepção de Pesquisa exploratória: Pesquisa qualitativa. In N.K. Malhotra (Ed.), *Pesquisa de marketing: uma orientação aplicada* (pp. 152-79). Porto Alegre, RS: Bookman.
- Markovina, J., Cacic, J., Kljusuric, J.G. *et al.* (2011). Young consumers' perception of functional foods in Croatia. *British Food Journal*, 113, 7-16.
- Minayo, M.C. (2010). *O desafio do conhecimento - pesquisa qualitativa em saúde*. São Paulo, SP: Hucitec.
- Mucci, A., Hough, G. & Ziliani, C. (2004). Factors that influence purchase intent and perceptions of genetically modified foods among Argentine consumers. *Food Quality and Preference*, 15, 559-567.
- Siró, I., Kápolna, E., Kápolna, B. *et al.* (2008). Functional food. Product development, marketing and consumer acceptance - a review. *Appetite*, 51, 456-67.
- Spanish Ministry of Agriculture, Food and the Environment. (2004). *Productos Funcionales*. [Internet document] Retrieved from http://www.magrama.gob.es/es/alimentacion/temas/consumo-y-comercializacion-y-distribucion-alimentaria/productos_funcionales_tcm7-8076.pdf. Accessed. 08 Feb 2014.
- Tomaschunas, M., Kohn, E., Bennwitz, P. *et al.* (2013). Quantitative and qualitative variation of

fat in model vanilla custard desserts: effects on sensory properties and consumer acceptance. *Journal of Food Science*, 78, S894-901.

Urala, N. (2005). *Functional foods in Finland: Consumers' views, attitudes and willingness to use*. Finland: VTT Publications.

Vannoppen, J., Verbeke, W., Van Huylenbroeck, G. *et al.* (2001). Motivational structures towards purchasing labeled beef and cheese in Belgium. *Journal of International Food and Agrobusiness Marketing*, 12, 1-29.

Verbeke, W., Pérez-Cueto, F.J.A. & Grunert, K.G. (2011). To eat or not to eat pork, how frequently and how varied? Insights from the quantitative Q-PorkChains consumer survey in four European countries. *Meat Science*, 88, 619-626.

Verbeke, W., Pérez-Cueto, F.J.A., Barcellos, M.D. *et al.* (2010). European citizen and consumer attitudes and preferences regarding beef and pork. *Meat Science*, 84, 284-292.

Xianliang, L. & Hongying, Y. (2012). The quantitative analysis on the individual characteristics of urban residents and their sport consumption motivation. *Physics Procedia*, 33, 2055-2063.

Yen, W.J. & Lewis, N.M. (2013). MyPyramid-omega-3 fatty acid nutrition education intervention may improve food groups and omega-3 fatty acid consumption in university middle-aged women. *Nutrition Research*, 33, 103-108.

<i>Profile of consumption of non-alcoholic beverages.</i>	
1.	What kind of non-alcoholic beverage do you currently consume?
2.	Do you consume it every day?
3.	At what point of the day or in which meal do you consume non-alcoholic beverage?
4.	What kind or flavor of beverage is your favorite?
<i>Perception of functional foods:</i>	
5.	In your opinion, what is functional food?

Figure 1. Interview script used in individual semi-structured interviews.

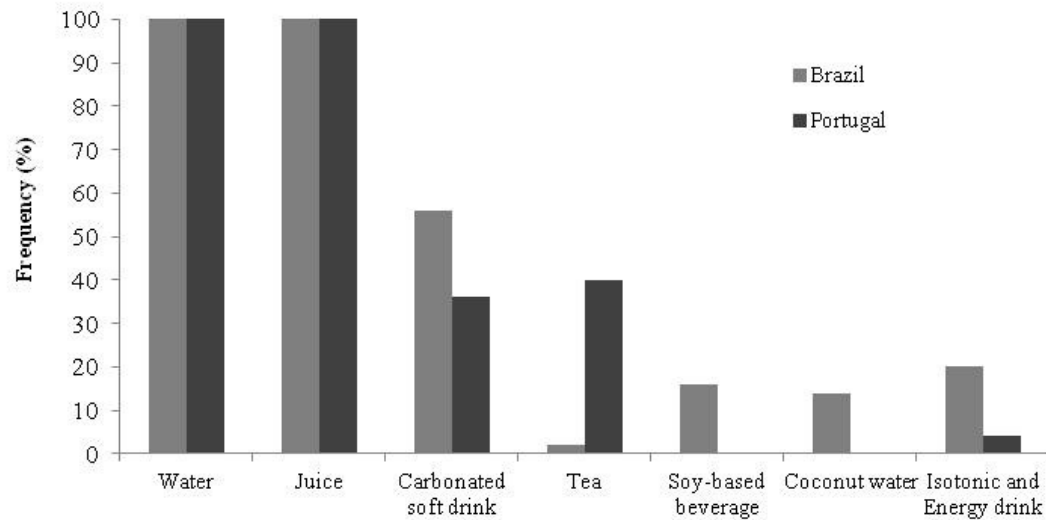


Figure 2. Frequency of non-alcoholic beverages consumption. Ribeirão Preto, SP, Brazil (n=50) and Porto, Portugal (n=50).

Table 1. Consumer perception of functional foods according to the CIs and the DCS categories. Ribeirão Preto, SP, Brazil and Porto, Portugal.

Question	Category- Central Idea	
	Brazil (n=50)	Portugal (n=50)
In your opinion, what is functional food?	A- Food that is beneficial to the organism (n=22)	A- Food that is beneficial to the organism (n=18)
	B- Food that has specific functions (n=7)	B- Food that has specific functions (n=17)
	C- I don't know (n=8)	C- I don't know (n=15)
	D- Food with required nutrients (n=7)	
	E- Natural/healthy food (n=6)	

CAPÍTULO 4

CONSUMER EXPECTATION OF NON-ALCOHOLIC FUNCTIONAL BEVERAGE

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CONSUMER EXPECTATION OF NON-ALCOHOLIC FUNCTIONAL BEVERAGE

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ABSTRACT

Objective: The DCS technique was used to evaluate and interpret consumer expectation of non-alcoholic functional beverage.

Design: Semi-structured individual interviews were conducted using a voice micro-recorder. In the interviews, participants were encouraged to express their expectations regarding beverage kind, color, flavor, texture, appearance, health benefits, and labeling information, imagining that they would develop and launch a product on the market.

Setting: Fitness centers in Ribeirão Preto, SP, Brazil and Porto, Portugal.

Participants: According to the inclusion and exclusion criteria, a total of 100 physical activity practitioners from Brazil (n=50) and Portugal (n=50) participated in the research.

Phenomenon of Interest: Consumer expectation of non-alcoholic functional beverage.

Analysis: The interviews lasted 20 minutes and were later transcribed. The consumer expectation has been assessed according to the Central Ideas (CI), Key Expressions (KE), and discourse.

Results: The consumer expectation of non-alcoholic functional beverage consists of a juice with a blend of citrus fruits, fruit energy drink, fruit isotonic with soy and RTD fruit tea. The characteristic fruit flavor, citric, acid, refreshing, sweet, with little sugar; characteristic fruit aroma, natural and refreshing; liquid texture; translucent appearance and color characteristic of fruit were the characteristics desired by the participants. The expectation seemed to be related to fruit juice, natural, with no added sugar and thickener. Participants also expected the beverages to improve their willingness, energy and well-being; to be rich in vitamins, minerals and antioxidants, and low in calories, sodium and sugar. All participants expressed interest in beverages that offer health benefits such as assisting the bowel function, reducing cholesterol, preventing osteoporosis and atherosclerosis. The most important information on the labels, capable of drawing consumers attention to the beverage were ingredients, nutritional information, calorie content, sodium, sugar, vitamins, minerals and additives.

Conclusions and Implications: This study considerably enlarges the consumer understanding of non-alcoholic functional beverages in Brazil and Portugal, and provides a useful tool that can be used by the industry to meet their expectations.

Key Words: consumer expectation, functional beverage, discourse of the collective subject, non-alcoholic beverage, fruit beverage, health benefits.

INTRODUCTION

The quest for well-being and quality of life is becoming a major challenge of the Brazilian and worldwide population. The growing global market for functional foods reflects the consumption trend of innovative products that are associated with the demand for healthy foods, those that promote health benefits. The USA has the largest market for functional foods, followed by Europe and Japan, which together account for more than 90% of functional foods in the world. Worldwide sales of functional foods should reach US\$1.74 trillion in 2015. Only in the USA sales were estimated at US\$38 billion, in

2011. In Brazil, sales of functional foods summed up US\$10 billion in 2011. It is estimated that the functional category is going to represent 20% of the national market for food and beverages in 2020 (VITAFOODS SOUTH AMERICA, 2013; SLOAN, 2012). The tendency regarding functional beverages aims at reducing the levels of cholesterol, sugar, the risk of cardiovascular disease and high blood pressure; adding bioactive compounds with antioxidant activity; vitamins and calcium to prevent osteoporosis; prebiotics and probiotics to increase immunity and to improve intestinal flora equilibrium; Omega-3 for controlling inflammation; sodium, potassium, phosphate and magnesium to replenish electrolytes; and amino acids to reduce muscle fatigue, among others. In addition, functional beverages should be geared towards the needs of specific populations, such as athletes, elderly, children and women (SLOAN, 2012; BLEIEL, 2010; SIRO *et al.*, 2008.).

Changing consumption profile shows that consumers are increasingly demanding. Besides searching for a healthier lifestyle, consumers are also concerned with socio-environmental and sustainability issues. Food and beverage products are becoming more diversified (BARBOSA *et al.*, 2010; SEBRAE, 2009) to meet these changing demands. It is, therefore, necessary to evaluate each niche to identify specific needs, and target different consumer groups according to their own personal reasons (GBADAMOSI; IWALOYE; BAMBER, 2009).

Qualitative research has been performed to investigate attitudes, beliefs, expectations and opinions of consumers about food and beverages (MALHOTRA, 2006; BARRIOS; COSTELL, 2004). However, few studies have been conducted to assess consumer expectation of non-alcoholic beverages. Zoellner *et al.* (2012) evaluated the attitude of adult consumers regarding the consumption of beverages with added sugar, such as carbonated soft drink, isotonic and energy drink, ready to drink (RTD) tea and fruit juice besides water and artificially sweetened beverages in southwest Virginia, USA. The main factors influencing the consumption of these beverages were flavor, availability, convenience, habit and price. Block *et al.* (2013) reported that taste and price greatly influenced the consumption of water and beverages with added sugar such as fruit juice, carbonated soft drink and RTD tea in a study performed with college students in Massachusetts and Louisiana, USA. Nutritional information and insight about how sugar intake influences obesity, diabetes and hypertension did not impact the choice of beverages. Gbadamosi, Iwaloye and Bamber (2009) found that price, convenience, availability, sugar content and socio-cultural environment influenced the consumption of carbonated soft drink and fruit beverages of students from Nigeria. Sorenson (2006) assessed the attitude and perception of orange juice consumers in Ireland and found that the motivations for consumption were related to the sensory perceptions and healthy characteristics of the beverage. Furthermore, the kind (natural or sparkling), size, brand, physico-chemical characteristics and water components, while labels like "ISO", "Top of Mind", etc., and shelf life date were the most important characteristics of labels and packaging for consumers of bottled water in Santa Catarina, Brazil (STANGLER, 2005).

The Discourse of the Collective Subject (DCS) uses a qualitative and quantitative approach, aiming to gather opinions, perceptions, preferences, attitudes and decisions of consumers in the same

discourse. The DCS allows the organization and tabulation of qualitative and quantitative data of verbal nature; obtained during individual or group interviews. The DCSs are constructed using key expressions (KE), the central idea (CI) and discourse. The KE are excerpts or literal transcriptions of speech, highlighted by the researcher that reveal the essence of the testimony or, more accurately, the discursive content of the segments into which the testimony is divided and that, in general, correspond to the objectives of the research. The CI describes accurately, reliably and summarized the meaning of each analyzed discourse and each homogeneous set of KE, which will result in the DCS. The DCS is the speech synthesis written in the first person, composed by the KEs that display the same CI (LEFÈVRE, LEFÈVRE, 2010). Few studies have used the DCS technique as a tool to evaluate consumer expectation regarding food and beverages. Queiroz *et al.* (2013) evaluated the perception of consumers of bottled water in Minas Gerais, Brazil, and found that the majority of respondents did not know the source, type of storage, and the social and environmental impacts of bottled water. Queiroz *et al.* (2012) evaluated how the newspapers news about bottled and tap water influenced consumer choices in Canada. The most important information was about the risk of consuming tap water. Information about the quality of bottled and tap water was ambiguous.

This work uses the DCS technique to evaluate and interpret consumer expectation of non-alcoholic functional beverage. The main focus of the study was to assess the expectation of consumers and use the results to suggest non-alcoholic functional beverages that meet the needs of consumers.

METHODOLOGY

Participants

A total of 100 physical activity practitioners from Brazil and Portugal were interviewed. Fifty participants were interviewed in two fitness centers in Ribeirão Preto, SP, Brazil, between October and December 2011, and another fifty, in two fitness centers in Porto, Portugal, between June and August 2012. The physical activity practitioners volunteered to participate in the interview and signed a free and clarified consent term, as required by the Human Research Ethics Committee (University of Ribeirão Preto, SP, Brazil, and University of Porto, Portugal) (Annex 1 and 2).

The selection criteria required individuals aged between 20 and 40 years old who liked non-alcoholic beverages at least slightly and consumed it at least three times a week. Individuals with food related disease such as obesity, diabetes, hypertension and hypercholesterolemia, and others were excluded. Participants were recruited based on prior inquiry to identify non-alcoholic beverage consumers in fitness centers in Ribeirão Preto, SP, Brazil and Porto, Portugal (FERRAREZI; VIANA, MONTEIRO, 2014). They voluntarily responded to a structured questionnaire containing questions about socio-demographic data and habit of consumption of non-alcoholic beverages (Appendix 1).

Data collection

Semi-structured interviews were conducted individually using a voice micro-recorder. The questions were pre-tested with 10 participants, for the recorder to be adjusted and the interviewers to be trained before the final implementation of the structured interview. The initial questions were not changed, since they were considered clear and met the research objectives. The interviews were conducted by the researcher in fitness centers for about 20 minutes each and transcribed later.

The questions were designed to identify the expectations of participants in relation to non-alcoholic functional beverages. In the interviews, participants were encouraged to express their expectations regarding beverage kind, color, flavor, texture, appearance, health benefits, and labeling information, imagining that they would develop and launch a product on the market (Figure 1).

Discourse of the Collective Subject

Data were analyzed using the DCS technique. The consumer expectation of non-alcoholic functional beverage was evaluated according to the central ideas (CIs), key expressions (KEs) and discourse (LEFÈVRE; LEFÈVRE, 2010). The CIs were identified in each participant response to each question and then categorized. The KEs of each response were extracted from the CIs, which were grouped together to construct the DCS. Each CI generated the corresponding DCS. The Qualiquantisoft® software was used to obtain the DCS.

RESULTS AND DISCUSSION

Table 1 presents the CIs and the corresponding categories (uppercase letters) on the consumer expectation of non-alcoholic functional beverage, followed by the number of individuals. Each question presents the CIs that have emerged from the participants' answers. The CIs related to the answers of each question generated discourses, whose excerpts are mentioned in the text in order to illustrate the essential aspects of the participants' accounts.

At the beginning of the interviews, each participant was encouraged to imagine that he had been chosen to develop a non-alcoholic beverage and launch it on the market. The first question was directed to the kind of beverage that participants would develop. The CIs of both Brazilians (n=23) and Portuguese (n=18) were predominantly in Category A, which consisted of developing a juice with mixed citrus fruits. The CI of a juice with mixed citrus fruits for the Brazilians is in the discourse: *"I would develop a blend of citric fruit juices as natural as possible, a different juice, which does not exist in the market"*. The discourse of the Portuguese was: *"I would develop a juice with citric fruits, orange and lemon. I only like beverages that have fruit with a little sugar, allowing tasting the fruit, and non-carbonated"*. The CI of a fruit energy drink, category B, also emerged in the discourses of Brazilians (n=10) and Portuguese (n=11). In Brazil, the discourse was: *"I would develop a fruit energy drink in order to improve willingness, energy, enhance sports performance and physical activity"*. The Portuguese

discourse regarding the fruit energy drink idea was: *"I would develop a blend of juice and energy drink to improve strength and well-being that refreshes, while being healthy and nutritious like orange juice, and pleasurable as carbonated soft drink. An energizing and tasty beverage that contains little sugar, but has sweet taste"* (Table 1, question 1). The discourse of participants showed the expectation of Brazilians and Portuguese for juice with mixed citrus fruits and fruit energy drink. Brazilians emphasized that the beverage containing citrus juices must be innovative, with flavors not currently in the market, without specifying which fruits. On the other hand, the Portuguese emphasized that the beverage should contain orange and lemon juice and little sugar to enhance the flavor of the fruit itself. The discourses showed that participants are not satisfied with the fruit juices available in the market, especially regarding the fruit mixtures like orange and mango, orange and apple, orange and passion fruit, passion fruit and peach, apple and pear, among others. In Brazil, participants reported that a fruit energy drink should improve energy and physical performance. The Portuguese were more detailed in the description of the fruit energy drink, indicating that this beverage should offer pleasure and well-being, in addition to energy, willingness and be nutritious and healthy as orange juice.

The Brazilians (n=5) also mentioned the category C, related to the idea of a fruit isotonic with soy, and the discourse was: *"I would develop an isotonic, and why not with soy? The soy beverages could be improved. Although soy is beneficial, the soy beverages available are not good. I would make an isotonic beverage containing soy and fruit blend"*. The category C of the Portuguese was related to the CI of a RTD fruit tea (n=5), and the discourse was: *"I would develop a ready to drink tea, with fresh fruit, orange or passion fruit, with no additives or artificial color"* (Table 1, question 1). The Brazilians expectation for a fruit isotonic with soy underscores the need for innovative beverages, which can combine the benefits and nutritional value of soy with the mineral replacement offered by isotonic beverages. The Portuguese, unlike the Brazilians, also answered that they would develop a RTD fruit tea. The Portuguese are the world's largest consumers of RTD tea (SERAFIM, 2013). Nevertheless, there is no RTD orange flavored tea available in the market, as mentioned by the participants, justifying the Portuguese interest for new flavors. According to Casotti (2002) one of the characteristics of the consumption patterns of modern societies is the search for novelty. The "flavor of new," as reported by Casotti (2002), has also been identified during the interviews when the participants indicated interest in juice containing a blend of citrus fruits, fruit energy drink, fruit isotonic with soy and RTD fruit tea. There is not yet on the market either fruit energy drink or fruit isotonic with soy. The expectation of consumers could support the development of this kind of beverage to meet the needs of Brazilians and Portuguese.

In the other categories of responses that emerged from the interviews with the Brazilians, the kind of desired beverage is not specified. Participants only emphasized the characteristics expected of such beverages, such as refreshing (n=5), category D; enriched with vitamins and minerals (n=3), category E; low calorie content (n=3), category F; and, low sodium (n=1), category G. The other categories that emerged from the Portuguese participants also did not specify the kind of beverage.

Participants highlighted the expected characteristics such as non-carbonated (n=45), category D; refreshing (n=7), category E; enriched with vitamins and minerals (n=7), category F; and, slimming effect (n=2), category G (Table 1, question 1). The category related to the non-carbonated beverage idea of the Portuguese generated the following discourse: *"I do not like carbonated beverages. I prefer more natural non-carbonated beverages"*. This speech indicates that the Portuguese consider carbonated beverages artificial and reaffirms the respondent interest for natural fruit beverage. This shows that the Portuguese want alternatives to carbonated soft drink, which was not observed in the responses of Brazilian participants.

Flavor

During the interviews, participants were asked what would be the flavor of the beverage. Category A, which corresponds to the idea of citric and refreshing flavor, dominated the CIs of Brazilians (n=37) with the discourse: *"A beverage with citric flavor, refreshing, to quench one's thirst. Due to our tropical climate, the beverage should be refreshing and thirst quenching"*. Followed by Category B (n=28), which is related to the idea of sweet flavor, the discourse was: *"Slightly sweet but not too sweet, with a little sugar to quench the thirst. I think sweet flavor would be better, but without added sugar"*. The category C related to the idea of an acid flavor was represented by a smaller number of Brazilian participants (n=7), with the discourse: *"I prefer the acid flavor of citrus fruit, pineapple, and kiwi"*. The Portuguese answers were predominantly in categories A and B, the idea of a refreshing (n=46) and sweet flavor (n=47), with the discourses: *"It should necessarily be refreshing to quench the thirst"* and *"Sweet but with little sugar, natural, with no additives. Not too sweet, and thirst-quenching. In general, sweet beverages cause thirst, but the beverage has to be a little sweet"*, respectively. This was followed by category C related to the idea of acid flavor (n=37) with the discourse: *"It has to be acid enough to be refreshing but not too much, so one can drink it. I like the flavor of lemon, but do not when the flavor becomes too acid"*. Category D is related to the idea of characteristic fruit flavor (n=23), which the Portuguese associated with the discourse: *"It should have a distinctive fruit flavor, such as orange, lemon, pineapple, passion fruit, apple, mango, strawberry, coconut, peach, tropical fruit, exotic fruit flavor, or herbs like mint. It could also be a blend of fruits that yields a different fruity flavor"* (Table 1, question 2). According to the answers, Brazilians prefer citrus flavored beverages, which are refreshing and sweet but with little sugar. The Portuguese emphasized that the beverage flavor must be fruity, especially mixed fruits, and sweet but with little sugar, acid and refreshing. Interestingly, participants in Brazil did not mention characteristic fruit flavor, which would be expected, since Brazil is a tropical country with a great variety of fruits available. Brazilians and Portuguese emphasized that despite the preferred sweet flavor, to quench the thirst the beverage should not be too sweet or have too much sugar. Participants also emphasized that a refreshing beverage is related to the citric flavor, and also to the acid flavor that is referred to the refreshing and citric flavor. Brazilians and Portuguese did not answer that the beverage should be cold, only that it should be refreshing and have a citric, acid flavor; key features of a thirst

quenching beverage. Human evolution has shown a preference for sweet flavors, which provides feelings of comfort and protection, experienced since childhood. Moreover, the sweetness also indicates that the fruit is ripe and ready for consumption, which may explain the great interest and preference for sweet-tasting beverages, but without added sugar (BRAZIL, 2008a; WRIGHT; NANCARROW; KWOK, 2001).

Aroma

Regarding the aroma of the beverage, Brazilians answered predominantly in category A that corresponds to the idea of refreshing aroma of citrus fruits (n=25); followed by the idea of characteristic fruit aroma (n=18) in category B. The idea of refreshing aroma of citrus fruits was accompanied by the discourse: *"Aroma of citrus fruit, refreshing, thirst-quenching, and conferring sense of pleasure and well-being"*. The idea of characteristic fruit aroma in the Brazilian generated the discourse: *"The aroma of the fruit itself, corresponding to the fruit flavor"*. Other categories mentioned by the Brazilians, but with fewer individuals, were category C, sweet aroma (n=9), and category D, light, not artificial aroma (n=6). In Portugal, two categories of responses predominated, category A (n=39), refreshing aroma idea, and category B, characteristic fruit aroma (n=27). The refreshing aroma idea of the Portuguese produced the discourse: *"Refreshing aroma, which gives feeling of pleasure, well-being, tranquility and relaxation"*. The category related to the idea of characteristic fruit aroma of the Portuguese had the discourse: *"It should have the aroma of the fruit itself, a fruity aroma. It should not have chewing gum-kind artificial fruit aroma, but the aroma of the fruit itself and should feel natural. I generally prefer orange, pineapple, mango, lemon, apple, passion fruit, strawberry, banana, peach, exotic aromas and herbs like mint"* (Table 1, question 3). The Brazilian participants reported that the aroma should be characteristic of fruit, especially citrus fruits such as orange and lemon, to be refreshing, a characteristic inherent to fruits. Although the Brazilians did not answer that the beverage flavor should be characteristic of fruit, it was observed that the aroma should be characteristic of fruit, confirming the interest in fruit beverages. The Portuguese answered that the beverage aroma should be refreshing and characteristic of fruits. The Brazilians associated the refreshing aroma with citrus fruit, which translates into pleasure and well-being. The Portuguese associated the refreshing aroma only with the feeling of pleasure and well-being. The aroma of fruits mentioned by Brazilian and Portuguese participants indicated interest in fruit beverages, natural, with no artificial aroma. The Brazilians also reported an interest for a beverage with a sweet, light and natural (not artificial) aroma, confirming the interest for a fruit beverage.

Texture

Regarding the beverage texture, Brazilians answers fell predominantly in the categories A and B, related to the idea of fluid, thin liquid texture (n=29), and viscous, thick texture (n=21), respectively. The discourse related to the idea of a more fluid, thin texture was: *"Not viscous because I like a thin, more liquid beverage"*. The category related to the idea of a more viscous, thick texture generated the

discourse: *"I like the juice more viscous, not as liquid"*. In Portugal, category A, related to the idea of a thin, fluid texture, was also predominant (n=45) with the discourse: *"A thin, more liquid, fluid texture, in order to drink several times a day"* (Table 1, question 4). Brazilians (n=21) who showed interest in more viscous, thick texture, seem to like the fruit nectar beverages produced in Brazil, which contain water, fruit juice concentrate (30% w/v maximum content), sugar and thickeners (BRAZIL, 2009). These beverages are available in the market in flavors like peach, mango, orange, grape, and strawberry, among others. On the other hand, both Brazilian (n=29) and Portuguese (n=45) participants were preferably interested in beverages with a more fluid, thin texture characteristic of naturally refreshing citrus fruit beverages, with no added thickeners.

Appearance and color

The participants were also asked about the appearance and color of beverage. The Brazilian participants chose predominantly a translucent beverage without suspended particles (n=34), category A, while in Portugal the answers were equally divided between translucent appearance without suspended particles (n=25), category A, and turbid appearance with suspended particles (n=25), category B (Table 1, question 5). All Brazilian and Portuguese participants answered that beverage color should be characteristic of the fruit. For example, an orange flavored beverage should have orange color; a grape flavored beverage, purple; and a peach flavored beverage, peach.

Assessing the results of this study as a tool for the development of functional non-alcoholic beverage shows that several kinds of beverages would meet the expectations of the consumers. When the demand was for a beverage with fruit flavor, characteristic of fruit, refreshing, acid; with aroma characteristic of fruit, refreshing; with fluid texture, translucent appearance and without suspended particles, the expectation seemed to be related to either fruit juice, fruit juice mixed and fruit energy drink. When consumer expectation was for a beverage with characteristic fruit flavor, refreshing, acid; with aroma characteristic of fruit, refreshing; thick and more viscous texture; turbid appearance and with suspended particles, respondents seem to refer specifically to orange juice with buds. The expectation for a beverage with characteristic fruit flavor, sweet; with sweet aroma; thick and more viscous texture; turbid appearance and without suspended particles, seems to be related to a fruit isotonic with soy. The expectation for a beverage with characteristic fruit flavor, sweet, refreshing; with sweet aroma; thin, fluid texture; translucent appearance and without suspended particles, seems to be related to the RTD fruit tea, such as orange tea, passion fruit tea and fruit tea.

Health benefits

All participants, Brazilians and Portuguese, reported that they would like the beverage to offer some kind of health benefit. The categories that emerged from the responses of participants in both countries were similar. The category related to the idea of energy, willingness and well-being was prevalent in Brazil (n=22) and Portugal (n=19), category A. The Brazilian discourse was: *"A beverage that boosts the*

energy, willingness to perform physical activities and feels well during jogging". The Portuguese discourse was: *"I would like a beverage that promotes more energy, willingness, and well-being with a revitalizing action. For those who work out, it is always important to have more energy and drive"*. Other category mentioned by Brazilian (n=18), category B, and Portuguese (n=15), category C, were related to the idea of a beverage with health benefits. The Brazilians discourse was: *"It should have a health benefit, such as improving bowel function, reducing cholesterol and preventing osteoporosis. I would like a healthy beverage that did not contain artificial color, with low fat, sugar, sodium, calorie content and preferably not fattening"*. The Portuguese discourse was: *"It should be a beverage that brings health benefits such as preventing atherosclerosis or regulating the intestinal flora. It should have few calories, no preservatives, artificial coloring and little sugar, and if possible, it should complement the daily energy needs, especially for those not able to have all meals during the day"*. Two more categories mentioned by Brazilians (n=11), category C, and Portuguese (n=19), category B, were related to the presence of vitamins, minerals and antioxidants. The Brazilians discourse was: *"I would like the beverage to have vitamins, minerals and antioxidants, perhaps due to the lack of time to consume the fresh fruit"*. The Portuguese discourse was: *"The beverage should contain enough vitamins to replace fruit consumption. The beverage should be able to supplement vitamins, minerals and antioxidants, to replace the intake of fruit, because carrying a fruit around is not practical since it can spoil, get hit and be damaged"*. Another category related to the idea of replacing minerals and hydration emerged from the Brazilian participants (n=9), category D, with the discourse: *"A beverage to replenish mineral salts and hydrate, a thirst quenching beverage to drink after physical activities, since some beverages do not quench thirst and need to be supplemented with water"*. In Portugal, the idea of hydration also came up in the responses associated with refreshing beverage (n=12), category D, with the discourse: *"I would like a beverage for hydration, because a lot of water is lost during physical activity. A beverage with not too much sugar, non-carbonated, but refreshing enough and able to quench one's thirst. Normally, teas are refreshing and hydrate a lot"*. Another category emerged in the responses of Brazilian (n=4) and Portuguese (n=5) participants, but with fewer individuals, related to a beverage with slimming effect, category E (Table 1, question 6). Regarding specific health benefits, Brazilian and Portuguese answered that the beverage should assist in bowel function, reduce cholesterol, prevent osteoporosis and atherosclerosis, as well as promote more energy and willingness, indicating the interest in functional beverages.

The participants' discourse pointed at several possibilities for functional beverages that would meet the expectations regarding health benefits. A fruit beverage containing Omega-3 and the Coenzyme Q10 could help control immunity and stimulate metabolism, improving willingness, energy and well-being. There is no fruit beverage containing Omega-3 and Coenzyme Q10 available on the market; however, these compounds have been indicated by the nutraceutical industry as viable alternatives for beverages. Fruit beverage with fiber, prebiotics and/or probiotics, vitamin D and calcium, low in fat, sugar, sodium and calories, as required by Brazilian participants, contribute to good bowel function,

lowering cholesterol and preventing osteoporosis. Natural fruit beverage containing antioxidants and no sugar, as desired by the Portuguese respondents, would contribute to the prevention of cardiovascular diseases, while adding fibers, prebiotics and/or probiotics contribute to good bowel function. As mentioned by the Portuguese, the beverage should supplement the calorie content of diet, but it should have low calorie content. To this end, soy or whey protein could be used. To replenish vitamins and minerals, and be high in antioxidants, as required by both Brazilians and Portuguese, the beverage should contain fruit. The fruit isotonic and isotonic with fruit tea would contribute to the replenishment of minerals and hydration. These beverages can be viable alternatives to meet the expectations of consumers. The consumption of non-alcoholic functional beverages, especially from fruit, is a growing market with high growth potential.

Participants also emphasized that the beverage must have low calorie content, sodium and sugar levels and be rich in vitamins and minerals, confirming the interest in beverages with health benefits that can promote wellness. In developed countries, sugar consumption has tripled in the last 50 years, leading to increasing obesity that contributes to the onset of cardiovascular disease, hypertension and type 2 diabetes. The increasing sugar consumption has caused great impact on public health worldwide by promoting low quality of life and bringing a high cost to the public health care system (HAN, POWELL, 2013; DE KONING *et al.*, 2011). According to the American Heart Association, approximately 50% of the sugar intake of the American population comes from beverages with added sugar. In the USA, the total energy consumed daily over beverages with high sugar content such as carbonated soft drinks, increased from 11.8% in 1965 to 21.0% in 2002, representing about 458 kcal per person per day. The increased consumption of carbonated soft drink with high sugar content may have contributed to increased rates of obesity in the world (HEDRICK *et al.*, 2013; DUFFEY; POPKIN, 2007).

Kleiman, Ng and Popkin (2012) reported that the two largest global companies of carbonated soft drinks (Coca-Cola and PepsiCo) have begun to address concerns regarding public health and consumer demands by diversifying its product lines, offering new options that include low-calorie carbonated soft drink (diet or light) and non-carbonated beverages such as flavored water, fruit juice, RTD tea, isotonic and energy drink. These companies focused on reducing the caloric value of their products. Therefore, the carbonated soft drinks calorie content decreased, but the calorie content of flavored water, isotonic and energy drink increased between 2000 and 2010. According to Kleiman, Ng and Popkin (2012), although the total energy per capita and the average caloric intake of beverages produced by PepsiCo and Coca-Cola declined in the USA, it has increased in developing countries such as Brazil and China.

Nine out of ten USA consumers buy or use low calorie food and beverages (ADA, 2004). Low calorie beverages contain sweeteners which are products with high sweetening power, with little or no caloric value and no glycemic response, used to impart sweet taste to foods and beverages. The use of sweeteners can help maintain weight, control blood glucose and prevent dental caries (BRAZIL, 2008b). The consumption of foods containing sweeteners has also been increasing in European countries and in developing countries such as Brazil, due to the growing interest in health care, accentuated by the aging

population. Sweeteners approved for use in non-alcoholic beverages include aspartame, Acesulfame potassium (Acesulfame-K), sodium saccharin, sodium cyclamate and sucralose (BRAZIL, 2008b; EU, 1994, 2003; ADA, 2004).

The increased consumption of low-calorie beverages with both sodium cyclamate and saccharin may contribute to the increase in sodium intake. The high sodium intake can lead to the development of chronic diseases such as hypertension, coronary heart and renal diseases, cerebrovascular accidents, among others. In developed countries sodium intake exceeds the maximum limit (2g/person/day) recommended by the World Health Organization (WHO, 2003). Most of the sodium intake is derived from processed foods. In Brazil, the sodium intake also exceeds the recommended limit (WHO, 2003). Sarno *et al.* (2009) reported that the amount of sodium consumed in Brazilian households is more than twice that recommended (WHO, 2003). Reducing sodium intake is one of the global strategies to reduce non-communicable chronic diseases (WHO, 2003).

In the discourses, although some participants have reported a preference for sweet taste, it was also highlighted that the calorie and sugar content of the beverage should be reduced, indicating the need to replace sugar with sweeteners. In this case, it is important to use a sodium-free sweetener. In Europe, especially in Portugal, non-alcoholic beverages calorie count was reduced in 24% between 2006 and 2012 (PROBEB, 2014), due to replacing added sugar with sweeteners.

Moreover, it is important to highlight that all segments involved, such as governments, food and beverage industry, health professionals and consumers should undertake the effort necessary to reduce sodium and sugar consumption seeking health benefits and better quality of life.

Brazilian and Portuguese participants also reported that the beverage should replenish minerals, promote hydration and thirst-quenching, in addition to having vitamins and antioxidants to replace fruit consumption. The Brazilians referred to the lack of time to consume fresh fruits throughout the day and the Portuguese to the inconvenience in transporting them. The respondents of both countries also stated that the beverage should be able to supplement the daily requirements of vitamins, antioxidants and minerals. The need to address the lack of these compounds results from the current lifestyle, which includes a fast, stressful and consequently imbalanced nutrition daily routine. The recommended fruit consumption is at least 150g or 3-5 servings per person, per day, to prevent chronic diseases such as heart disease, cancer, diabetes, obesity and micronutrient deficiencies (WHO, 2003). The consumption of fruit among Brazilians is low, less than 3 servings per day (BRAZIL, 2008a). In Europe the average fruit consumption is 166g per person, per day (EUROPEAN FOOD INFORMATION COUNCIL-EUFIC, 2014).

Label Information

Brazilians and Portuguese were also asked about what kind of label information would help the consumers to purchase the beverage. The responses were predominantly in category A for Brazilians (n=38) and Portuguese (n=38), related to the CI of informing beverage ingredients and its health benefits.

The Brazilians discourse was: *"I think that nutritional information, such as the calorie, sugar, sodium and vitamins content, is important and should be highlighted on the label. I also find important to explain about antioxidants and their benefits, in addition to the preservatives' effects on health"*. The Portuguese discourse was: *"The information that should be displayed on the label is the beverage nutritional characteristics, its ingredients, vitamins content and calorie content. Information about the percentage of sugar and sodium should be in evidence at the front of the label. I think it is essential information related to the beverage composition, especially the fruits, and whether it is made from natural juice, without preservatives and artificial color. The health benefits of the beverages should also be explained. Maybe, it should also contain information about the beverage capability to hydrate, replenish nutrients and minerals lost during physical activity. If the label states that the beverage helps to lose weight, it will sell for sure"*. Category B, related to the CI of a healthy and natural beverage, emerged in the responses of Portuguese (n=12) and Brazilian (n=6) participants, albeit in lower number. The Portuguese discourse was: *"Any health related information, such as 100% natural; take care of your own health; get healthy in two minutes; light; 0%. The beverage is 100% natural contains no chemical additives"*. The Brazilian discourse was: *"Information stating that the beverage is healthy, has no preservatives, and using the expression 100% natural, for example"* (Table 1, question 7). The most important information on the labels of non-alcoholic beverages, capable of drawing consumers' attention, was: beverage ingredients, nutritional information, calorie content, sodium, sugar, vitamins, minerals and additives, which are already on the labels. The label information of non-alcoholic beverages on the ingredients, including additives, and nutritional information, including calories, sodium and sugar, are required according to the legislation (BRAZIL, 2002, 2003; EU, 1990, 2000). The content of vitamins and minerals is optional, provided they are present in amounts equal to or exceeding 5% of the Recommended Daily Intake (RDI) per serving in Brazil (BRAZIL, 2003) and 15% of the RDI in Europe (EU, 1990). It is surprising that consumers emphasized with great interest the expectation of information which is already required by legislation and included on the labels of the beverages. This indicates that consumers do not read the labels or do not understand their information, as reported in the literature (FERRAREZI, DOS SANTOS, MONTEIRO, 2013; FERRAREZI *et al.*, 2013; RANILOVIC; BARIC, 2011; FDA, 2011). Participants emphasized that the content of sodium, sugars and vitamins should be highlighted in the front of the labels, for easy consultation. Moreover, particularly the Brazilians reported it would be interesting if brief definitions about antioxidants and additives would appear on the label. The Portuguese participants emphasized that the label must indicate whether the beverage is natural and offers any health benefit, using slogans like *"100% natural"*, *"take care of your health"*, *"get healthy in two minutes"*, *"light"* and *"0%"*, indicating that the information should be appealing to attract the attention of consumers. It is important that consumers know and correctly interpret the label information so they can make conscious choices about healthy foods and beverages (FERRAREZI; DOS SANTOS; MONTEIRO, 2013).

The knowledge about diet trends can contribute to the development of products that meet the needs of consumers. Barbosa *et al.* (2010) identified global trends and demands of food consumers, based

on studies that have identified food trends in Europe, Latin America and Asia. Trends were divided into sensory and pleasure, related to gourmet, exotic and with varying flavors foods; healthiness and well-being, related to foods that benefit health; convenience and practicality, focused on fast prepared foods, ready for consumption; reliability and quality, regarding foods that have informative labeling as well as quality control seal; and sustainability and ethics, focused on products linked to sustainable companies. Based on the work of Barbosa *et al.* (2010), this work aimed to identify trends in non-alcoholic beverages. The expectation for a beverage with a blend of exotic flavor, and interactive packaging with attractive information is related to the trend of sensory and pleasure. The expectation for functional beverage with health benefits and natural ingredients, with reduced levels of sodium and sugar, obtained from vegetable products, like soy, is related to the trend of healthiness and well-being. The expectation for a beverage to replace the consumption of fruits, as a practical alternative to consume the required daily intake of vitamins, minerals and antioxidants is related to the trend of convenience and practicality. The expectation for label information as a vehicle for consumer information is related to the trend of reliability and quality.

Gbadamosi, Iwaloye and Bamber (2009) reported that factors such as convenience, availability for purchase, price, sugar content of beverages and socio-cultural environment influenced the consumption of carbonated soft drink and fruit beverages of students from Nigeria. The importance of product availability for purchase in different locations other than the supermarket was emphasized by students. The price was used to select the brand at the time of purchase while stressing that very cheap brand could not be trusted. The amount of caffeine and sugar was taken into consideration at the time of purchase indicating the students concerns regarding the consumption of these ingredients. The consumption of these beverages was associated with moments of fun, relaxation, pleasure and coming together, when consumed in groups (GBADAMOSI; IWALOYE; BAMBER, 2009). Sorenson (2006) assessed the attitude and perception of consumers of orange juice in Ireland. Consumers reported that orange juice should not be sweet; the presence of buds may indicate that the beverage is not natural while orange juice sold in refrigerated display counters is fresh and natural. The information on the labels should include "*no added sugar, preservatives and artificial color*". The respondents showed positive attitude to expressions such as "*pure*", "*100% natural*" and "*pure orange juice*", and negative attitude toward added calcium or multivitamins. Respondents showed a positive attitude toward a probiotic orange juice, considering it a refreshing alternative to probiotic dairy beverages. Stangler (2005) evaluated the expectation of information on labels of bottled water consumers in Florianópolis, Santa Catarina. The items considered important were: whether it is carbonated or not, size, brand, physicochemical characteristics and water components, "ISO" and "Top of Mind" seals, among others, and shelf life date. Queiroz *et al.* (2013) evaluated the perception of consumers of bottled water in three cities of Minas Gerais, Itabirito, Ouro Preto and Vespasiano. Respondents consumed preferably bottled water, especially in cases where the supplied tap water did not meet the required quality standards. Most respondents did not know the source, type of storage, and the social and environmental impacts of

consuming bottled water. Block *et al.* (2013) evaluated the consumption of water and beverages with added sugar such as fruit juice, carbonated soft drink and RTD tea among the university students from Massachusetts and Louisiana, USA. Flavor and price were the factors that influenced the consumption of beverages. Juice was considered a healthy beverage compared to carbonated soft drink. The flavor of the juice and the hydration power of water were the main reasons for their consumption. Students reported that calorie content is an important factor when choosing food, but most did not know the calorie content of beverages. Educational messages regarding the high health impact of beverages were considered necessary to reduce the consumption of beverages with added sugar. Zoellner *et al.* (2012) evaluated the attitude of adult consumers from rural southwest Virginia, USA, regarding the consumption of carbonated soft drink, isotonic, energy drink, RTD tea and fruit juice besides water and artificially sweetened beverages. Consumers of isotonic and energy drink, fruit juice and RTD tea believe that these beverages contain high water content, electrolytes and antioxidants, are low in sugar, offer health benefits and quench thirst. The water was considered a refreshing beverage that helps the metabolism and keeps the body hydrated. The artificially sweetened beverages were considered bad because it is believed that sweeteners have negative health consequences, such as, contributing to cancer development. Factors influencing the consumption of these beverages were flavor, availability, convenience, habit and price.

Taking into account the difference between consumers, features such as demand for convenience, health issues, social and cultural reasons were the main aspects that emerged from this work and literature (BLOCK *et al.*, 2013; QUEIROZ *et al.*, 2013; ZOELLNER *et al.*, 2012; GBADAMOSI; IWALOYE; BAMBER, 2009; SORENSON, 2006; STANGLER, 2005). The DCS technique was used for the first time to assess consumer expectation of non-alcoholic functional beverage. This study considerably enlarges the consumer understanding of non-alcoholic functional beverages in Brazil and Portugal, and provides a useful tool that can be used by the industry to meet their expectations. Understanding the consumer expectations and behavior can support new market opportunities directed to healthy and natural products that contribute to the health of consumers and meet their needs.

CONCLUSION

The consumer expectation of non-alcoholic functional beverage consists of a juice with a blend of citrus fruits, fruit energy drink, fruit isotonic with soy and RTD fruit tea. The characteristic fruit flavor, citric, acid, refreshing, sweet, with little sugar; characteristic fruit aroma, natural and refreshing; liquid texture; translucent appearance and color characteristic of fruit were the characteristics desired by the participants. The expectation seemed to be related to fruit juice, natural, with no added sugar and thickener. Participants also expect the beverages to improve their willingness, energy and well-being; to be rich in vitamins, minerals and antioxidants and low in calories, sodium and sugar. All participants expressed interest in beverages that offer health benefits such as assisting the bowel function, reducing cholesterol, preventing osteoporosis and atherosclerosis. The most important information on the labels, capable of drawing consumers attention to the beverage were ingredients, nutritional information, calorie

content, sodium, sugar, vitamins, minerals and additives.

The non-alcoholic functional beverage could be similar in both countries, since Brazilians and Portuguese have expressed the same expectations despite their cultural differences and habits. Juice with mixed citrus fruits and fruit energy drink could be successfully marketed in Brazil and Portugal. Some peculiarities related to the beverage should be taken into account, as ready to drink fruit tea variations, and fruit isotonic with soy, especially suited to the Portuguese and Brazilian markets, respectively.

REFERENCES

- AMERICAN DIETETIC ASSOCIATION – ADA. Position of the American Dietetic Association: Use of nutritive and nonnutritive sweeteners. **Journal of the American Dietetic Association**. v. 104, n. 2, p. 255-275, 2004.
- BARBOSA, L.; MADI, L.; TOLEDO, M.A.; REGO, R.A. As tendências da alimentação. In: MADI, L.; COSTA, A.C.P.; REGO, R.A., coordenadores. **Brasil Food Trends 2020**. São Paulo:BFT, 2010.
- BARRIOS, E.X.; COSTELL, E. Review: Use of Methods of Research into Consumers' Opinions and Attitudes in Food Research. **Food Sci Tech Int**. v. 10, n. 6, p. 359–71, 2004.
- BLEIEL, J. Functional foods from the perspective of the consumer: How to make it a success? **International Dairy Journal**. v. 20, p.303-306, 2010.
- BLOCK, J.P.; GILLMAN, M.W.; LINAKIS, S.K.; GOLDMAN, R.E. If It tastes good, I'm drinking It: Qualitative study of beverage consumption among college students. **Journal of Adolescent Health**. v. 52, p. 702-706, 2013.
- BRASIL. Agência Nacional de Vigilância Sanitária. Resolução RDC nº 259, de 20 de setembro de 2002. Aprova o regulamento técnico para rotulagem de alimentos embalados. **Diário Oficial da União**, 23 de setembro de 2002.
- BRASIL. Agência Nacional de Vigilância Sanitária. Resolução RDC nº 360, de 23 de dezembro de 2003. Aprova o regulamento técnico sobre rotulagem nutricional de alimentos embalados. **Diário Oficial da União**, 26 de dezembro de 2003.
- BRASIL. Agência Nacional de Vigilância Sanitária. Resolução RDC Nº 18, de 24 de março de 2008. Dispõe sobre o Regulamento Técnico que autoriza o uso de aditivos edulcorantes em alimentos, com seus respectivos limites máximos. **Diário Oficial da União**, 20 de março de 2008b.
- BRASIL. Ministério da Saúde. Secretaria de Atenção à Saúde. Departamento de Atenção Básica. **Guia Alimentar para a População Brasileira: Promovendo a alimentação saudável**. Brasília:Ministério da Saúde, 1 ed., 2008a. 210p.
- BRASIL. Ministério da Agricultura, Pecuária e Abastecimento. Decreto 6.871, de 04 de junho de 2009. Regulamenta a Lei 8.918, 14 de julho de 1994, que dispõe sobre a padronização, a classificação, o registro, a inspeção, a produção e a fiscalização de bebidas. **Diário Oficial da União**, 05 de junho de 2009.
- CASOTTI, L. **À mesa com a família: Um estudo do comportamento do consumidor de alimentos**. Rio de Janeiro: Mauad, 2002.
- DE KONING, L.; MALIK, V.S.; RIMM, E.B.; WILLET, W.C.; HU, F.B. Sugar-sweetened and artificially sweetened beverage consumption and risk of type 2 diabetes in men. **The American Journal of Clinical Nutrition**. v. 93, p. 1321-1327, 2011.
- DUFFEY, K.J.; POPKIN, B.M. Shifts in patterns and consumption of beverages between 1965 and 2002. **Obesity**. v. 15, n. 1, p. 2739-2747, 2007.
- EUROPEAN FOOD INFORMATION COUNCIL – EUFIC. O consumo de fruta e legumes na Europa – os europeus consomem o suficiente?. **Revista do EUFIC**. n. 01, 2012. Available on: <<http://www.eufic.org/article/pt/expid/Fruit-vegetable-consumption-Europe/>>. Accessed on: 01 fev. 2014.
- EUROPEAN UNION - EU. Directiva 90/496/CE do parlamento europeu e do conselho de 06 de setembro de 1990 relativa à rotulagem nutricional de generos alimentícios. **Jornal oficial** nº L 276 de 24 de setembro de 1994, p. 5.
- EUROPEAN UNION - EU. Directiva 94/35/CE do parlamento europeu e do conselho de 30 de junho de 1994 relativa aos edulcorantes para utilização nos generos alimentares. **Jornal oficial** nº L 237

- de 10 de setembro de 1994, p. 3.
- EUROPEAN UNION - EU. Directiva 2000/13/CE do parlamento europeu e do conselho de 20 de março de 2000 relativa à aproximação das legislações Estados-Membros respeitantes à rotulagem, apresentação e publicidade dos generos alimentícios. **Jornal oficial** nº L 109 de 06 de maio de 2000, p. 36.
- EUROPEAN UNION - EU. Directiva 2003/115/CE do parlamento europeu e do conselho de 22 de dezembro de 2003 que altera a directiva 94/35/CE relativa aos edulcorantes para utilização nos generos alimentares. **Jornal oficial** nº L 24/65 de 29 de janeiro de 2004, p. 7.
- FERRAREZI, A.C.; DOS SANTOS, K.O.; MONTEIRO, M. Consumer interpretation of ready to drink orange juice and nectar labeling. **International Journal of Food Science and Technology**. v. 48, n. 6, p. 1296-1302, 2013.
- FERRAREZI, A.C.; MINIM, V.P.R.; DOS SANTOS, K.O.; MONTEIRO, M. Consumer attitude towards purchasing intent for ready to drink orange juice and nectar. **Nutrition and Food Science**. v. 43, n. 4, p. 304-312, 2013.
- FERRAREZI, A.C.; VIANA, V.; MONTEIRO, M. Consumption of non-alcoholic beverages: a cross-cultural study between Brazil and Portugal. **Journal of Consumer Behaviour**. [Submetido em Abril de 2014].
- FDA – Food and Drug Administration. (2011). Confusing claims. <http://www.fda.gov/ForConsumers/ConsumerUpdates/ucm094536#confusing>. (accessed on February 02, 2014).
- GBADAMOSI, A.; IWALOYE, O.O.; BAMBER, D. An exploratory study of students' consumption of non-alcoholic beverages in Nigeria. A qualitative perspective. **Nutrition and Food Science**. v. 39, n. 6, p. 609-618, 2009.
- HAN, E.; POWELL, L.M. Consumption patterns of sugar-sweetened beverages in the United States. **Journal of the academy of nutrition and dietetics**. v. 113, n. 1, p. 43-53, 2013.
- HEDRICK, V.E.; COMBER, D.L.; FERGUSON, K.E.; ESTRABOOKS, P.A.; SAVLA, J.; DIETRICH, A.M.; SERRANO, E.; DAVY, B.M. A rapid beverage intake questionnaire can detect changes in beverage intake. **Eating behaviors**. v. 14, p. 90-94, 2013.
- KLEIMAN, S.; NG, S.W.; POPKIN, B. Drinking to our health: can beverage companies cut calories while maintaining profits? **Obesity Public Health**. v. 13, p. 258-274, 2012.
- LEFÈVRE, F.; LEFÈVRE, A.M.C. **Pesquisa de representação social**. Um enfoque qualiquantitativo. Brasília: Liber Livros, 2010.
- MALHOTRA, N.K. 2006. Concepção de Pesquisa exploratória: Pesquisa qualitativa.. In: MALHOTRA, N.K. (Ed.), **Pesquisa de marketing: uma orientação aplicada**. Porto Alegre: Bookman. 4 ed., p. 152-79, 2006.
- PROBEB – Associação Portuguesa de Bebidas Refrescantes Não alcoólicas. **Saúde e estilos de vida**. Available on: <<http://www.probeb.pt/conteudo/Boas-Praticas/-/96>>. Accessed on: 14 mar. 2014.
- QUEIROZ, J.T.M.; DORIA, M.deF.; ROSENBERG, M.W.; HELLER, L.; ZHOURI, A. Perceptions of bottled water consumers in three Brazilian municipalities. **Journal of Water and Health**. v. 11, p. 520-531, 2013.
- QUEIROZ, J.T.M.; ROSENBERG, M.W.; HELLER, L.; ZHOURI, A.; SILVA, S.S. News about tap and bottled water: can this influence people's choices? **Journal of Environmental Protection**. v. 3, p. 324-333, 2012.
- RANILOVIC, J.; BARIC, I.C. Differences between younger and older populations in nutrition label reading habits. **British Food Journal**. v. 113, n. 1, p. 109-121, 2011.
- SARNO, F.; CLARO, R.M.; LEVY, R.B.; BANDONI, D.H.; FERREIRA, S.R.G.; MONTEIRO, C.A. Estimated sodium intake by the Brazilian population, 2002-2003. **Rev. Saúde Pública**. v. 43, n. 2, 219-225, 2009.
- SEBRAE - SERVIÇO BRASILEIRO DE APOIO ÀS MICRO E PEQUENAS EMPRESAS. **Mudanças no Perfil do Consumo no Brasil: Principais Tendências nos Próximos 20 Anos**. (2009). Available on: <<http://www.sebrae.com.br/setor/servicos/o-setor/panorama>>. Accessed on: 07 fev. 2011.
- SERAFIM, A. **Foi você que pediu um chá?** Available on: <<http://www.kantarworldpanel.com/pt/press-releases/Press-release>>. Accessed on: 01 jun. 2013.
- SIRÓ, I.; KÁPOLNA, E.; KÁPOLNA, B.; LUGASI, A. Functional food. Product development, marketing and consumer acceptance - a review. **Appetite**. v. 51, p. 456-67, 2008.

- SLOAN, A.E. Top 10 Functional Food Trends. **Food Technology**. v. 4, p. 24-41, 2012.
- SORENSEN, D.J. **Market-oriented new product development of functional beverages**. PhD Thesis, University College Cork. 414p. 2006.
- STANGLER, S. **Percepção de valor como instrumento de marketing das pequenas e médias empresas envasadoras de água mineral, na disputa de mercado com as grandes envasadoras de bebidas e de águas adicionadas de sais: um estudo de caso em Santa Catarina**. Dissertação, Universidade Federal de Santa Catarina. 116 p. 2005.
- VITAFOODS SOUTH AMERICA. **Ascensão da classe C faz mercado de alimentação funcional ganhar importância e crescer acima da média mundial no Brasil**. Available on: <http://www.vitafoodssouthamerica.com/page.cfm/Action=fileDownload/formatFor=press_1_assocPDF/fileName=1176419_assocPDF/fileExt=pdf>. Accessed on: 11 mar. 2013.
- WHO – World Health Organization. **Diet, Nutrition and the Prevention of Chronic Diseases**. Geneva, 2003. 160p.
- WRIGHT, L.T.; NANCARROW, C.; KWOK, P.M.H. Food taste preferences and cultural influences on consumption. **British Food Journal**. v. 103, n. 5, p. 348-357, 2001.
- ZOELLNER, J.; KRZESKI, E.; HARDEN, S.; COOK, E.; ALLEN, K.; ESTABROOKS, P.A. Qualitative application of the theory of planned behavior to understand beverage consumption behaviors among adults. **Journal of the Academy of Nutrition and Dietetics**. v. 112, n. 11, p.1774-1784, 2012.

Consumer expectation of a functional non-alcoholic beverage:

Suppose you have been chosen to develop a non-alcoholic beverage and launch it on the market.

1. What kind of beverage would you develop?
2. What would be the flavor?
3. What would be the aroma of the beverage?
4. What would be the texture of the beverage?
5. What would be the appearance and color of the beverage?
6. In relation to health, would you like this beverage to bring some benefit? What kind?
7. What information should be in the beverage label to draw attention at the time of purchase?

Figure 1. Interview script used in individual semi-structured interviews.

Table 1. Consumer expectation of non-alcoholic functional beverage according to the CIs and the DCS categories. Ribeirão Preto, SP, Brazil and Porto, Portugal.

Question	Category- Central Idea	
	Brazil (n = 50)	Portugal (n = 50)
1. What kind of beverage would you develop?	A-Juice with mixed citrus fruits (n = 23) B-Fruit energy drink (n = 10) C-Isotonic with soy (n = 5) D-Refreshing beverage (n = 5) E-Beverage enriched with vitamins/minerals (n = 3) F-Low calorie beverage (n = 3) G-Low sodium beverage (n = 1)	A-Juice with mixed citrus fruits (n = 18) B-Fruit energy drink (n = 11) C-Ready to drink fruit tea (n = 5) D-Non-carbonated beverage (n = 45) E-Refreshing beverage (n = 7) F-Beverage enriched with vitamins/minerals (n = 7) G-Beverage with slimming effect (n = 2)
2. What would be the flavor?	A-Citric/Refreshing (n = 37) B-Sweet (n = 28) C-Acid (n = 7)	A-Refreshing (n = 46) B-Sweet (n = 47) C-Acid (n = 37) D-Characteristic of fruit (n = 23)
3. What would be the aroma of the beverage?	A-Refreshing/Citrus fruits (n = 25) B-Characteristic of fruit (n = 18) C-Sweet (n = 9) D-Light/not artificial (n = 6)	A-Refreshing (n = 39) B-Characteristic of fruit (n = 27)
4. What would be the texture of the beverage?	A-Fluid/thin (n = 29) B-Viscous/thick (n = 21)	A-Fluid/thin (n = 45) B-Viscous/ thick (n = 5)
5. What would be the appearance and color of the beverage?	A-Translucent without suspended particles (n = 34) B-Turbid with suspended particles (n = 16)	A- Translucent without suspended particles (n = 25) B- Turbid with suspended particles (n = 25)
6. In relation to health, would you like this beverage to bring some benefit? What kind?	A-Energy, disposition and well-being (n = 22) B-Bring Benefits (n = 18) C-Offer vitamins, minerals and antioxidants (n = 11) D-Hydration and replenish minerals (n = 9) E-Slimming effect (n = 4)	A-Energy, disposition and well-being (n = 19) B-Offer vitamins, minerals and antioxidants (n = 19) C-Bring benefits (n = 15) D-Refreshing and hydration (n = 12) E-Slimming effect (n = 5)
7. What information should be on the beverage label to draw attention at the time of purchase?	A-Information about beverage benefits (n = 38) B-Demonstrate that the beverage is healthy/natural (n = 6) C-Information on how to consume the beverage (n = 4) D-Shelf life date (n = 3)	A-Information about beverage benefits (n = 38) B-Demonstrate that the beverage is healthy/natural (n = 12) C-Striking/appealing packaging (n = 8)

CONCLUSÕES

O conjunto de resultados obtidos indica que:

1. Dentre as técnicas qualitativas usadas para avaliar o comportamento do consumidor, a técnica do DSC se destaca por utilizar uma abordagem quali-quantitativa, permitindo avaliar a necessidade, percepção, preferência, atitude e decisão dos consumidores. O conhecimento do comportamento, da expectativa e da necessidade dos consumidores de diferentes nichos de mercado e diferentes tipos de alimentos poderá dar suporte à indústria de alimentos e bebidas.

2. O perfil dos praticantes de atividade física em academias de ginástica no Brasil e em Portugal era distinto, com maioria dos participantes entre 20 e 40 anos, predominância de homens entre portugueses e de mulheres entre brasileiros. Os participantes brasileiros tinham maior nível de escolaridade, maior renda e maior frequência em academias de ginástica. As bebidas mais consumidas pelos brasileiros foram água mineral, suco recém preparado com a fruta, néctar e suco pronto para beber e refrigerante, e em Portugal, água mineral e chá pronto para beber. A frequência de conhecimento sobre alimentos funcionais foi maior entre os participantes brasileiros. A água mineral foi a bebida mais consumida entre brasileiros e portugueses. O alto consumo de suco de fruta e néctar dos brasileiros e de chá pronto para beber dos portugueses, mais de quatro vezes por semana, indicou o interesse dos praticantes de atividade física em academias de ginástica por bebidas que favoreçam a saúde e qualidade de vida.

3. Os critérios de inclusão para a escolha dos indivíduos participantes das entrevistas para o DSC envolveram a faixa etária dos indivíduos e o quanto gostavam e consumiam bebidas não alcoólicas. Entrevistados com doenças relacionadas à alimentação foram excluídos. A maioria dos entrevistados mostrou saber o que são alimentos funcionais. Os entrevistados relataram que os alimentos funcionais têm propriedades e funções específicas capazes de promover benefícios à saúde, devendo ser consumidos diariamente em determinada quantidade para que os efeitos à

saúde sejam alcançados.

4. A expectativa dos consumidores por bebida funcional não alcoólica esteve relacionada a bebidas com mistura de frutas cítricas, bebida energética de fruta, isotônico de fruta com soja e chá de fruta pronto para beber. O sabor característico de fruta, cítrico, ácido, refrescante, doce, mas com pouco açúcar, com aroma natural característico de fruta e refrescante, com textura fina, não encorpada, com aparência translúcida e cor característica da fruta, foram as características relatadas pelos entrevistados para indicar sua expectativa por bebida de fruta, natural, sem adição de açúcar e espessante. Os entrevistados também esperam que as bebidas ofereçam disposição, energia e bem-estar, que sejam ricas em vitaminas, minerais e antioxidantes e que tenham baixo valor calórico, baixo teor de sódio e de açúcar.

5. O interesse por bebidas que ofereçam benefícios à saúde como auxiliar no funcionamento intestinal, na redução do colesterol, na prevenção da osteoporose e da aterosclerose foi relatado por todos os entrevistados. As informações dos rótulos mais importantes para chamar a atenção dos consumidores de bebidas não alcoólicas foram os ingredientes da bebida, informação nutricional, valor calórico, teor de sódio, açúcar, vitaminas, minerais e aditivos.

6. Os resultados também indicaram que as bebidas funcionais não alcoólicas poderiam ser similares em ambos os países, uma vez que brasileiros e portugueses expressaram a mesma expectativa, apesar de suas diferenças culturais e de hábitos de consumo. Bebidas com mistura de frutas cítricas e bebida energética de fruta poderiam ser comercializadas com sucesso no Brasil e em Portugal. Algumas particularidades relacionadas ao tipo de bebida devem ser levadas em consideração, como variações de chá de fruta pronto para beber direcionado especialmente ao mercado português e de isotônicos de fruta com soja para o mercado brasileiro.

ANEXO 1



Ribeirão Preto, 22 de junho de 2011.

Prezado(a) Senhor(a) Dr(a) Alessandra C. Ferrarezi Menegario

Vimos por meio desta informar que o Comitê de Ética em Pesquisa com Seres Humanos da UNAERP – Universidade de Ribeirão Preto analisou e aprovou sem restrições o projeto **"A expectativa do consumidor como ferramenta para o desenvolvimento de bebida funcional a base de fruta destinada aos jovens adultos"**, tendo como pesquisador Alessandra C. Ferrarezi Menegario, bem como o respectivo Termo de Consentimento Livre e Esclarecido em reunião ocorrida em 17 de Maio de 2011, registrado sobre o **ComÉ:24/2011**.

Temos ciência que o estudo em questão será conduzido na Universidade de Ribeirão Preto – UNAERP.

Solicitamos que o senhor encaminhe os relatórios parciais e finais, bem como envie-nos possíveis emendas e novos termos de consentimento livre e esclarecido, notifique qualquer evento adverso sério ocorrido no centro e novas informações sobre a segurança/toxicidade da medicação para que possamos fazer o devido acompanhamento deste estudo.

Atenciosamente,

Profª Drª Luciana Rezende Alves Oliveira

Coordenadora do Comitê de Ética em Pesquisa para Seres Humanos
Universidade de Ribeirão Preto

Av. Costábile Romano, 2201 – Bairro Ribeirânia – Ribeirão Preto-SP - CEP. 14096-900

Fone: (16) 3603-6779 - e-mail cetica@unaerp.br

TERMO DE CONSENTIMENTO LIVRE E ESCLARECIDO

Eu, _____ RG: _____ Estado
 Civil: _____ Idade: _____ anos Residente: _____ nº: _____
 Complemento: _____ Bairro: _____ Cidade: _____
 CEP: _____ Estado: _____ Telefone: _____ e-mail: _____

Declaro ter sido esclarecido sobre os seguintes pontos:

1. O trabalho tem por finalidade investigar a expectativa de jovens adultos sobre bebidas funcionais à base de fruta.
2. Ao participar do projeto, além de colaborar para o desenvolvimento de um projeto de pesquisa, estarei contribuindo para avaliar a expectativa de consumidores jovens adultos sobre bebidas funcionais à base de fruta.
3. A minha participação como voluntário terá a duração de aproximadamente 20-30min.
4. Não terei nenhuma despesa ao participar desse estudo.
5. Os procedimentos aos quais serei submetido não provocarão danos físicos ou financeiros e por isso não haverá a necessidade de ser indenizado por parte da equipe responsável por esse trabalho ou da Instituição (FCF/UNESP).
6. Meu nome será mantido em **sigilo**, assegurando assim a minha **privacidade** e, se desejar, serei informado sobre os resultados dessa pesquisa pela pesquisadora Alessandra Menegario (35)8433-3955 ou ainda pelo e-mail: aleferrarezi@hotmail.com.
7. Poderei me recusar a participar ou mesmo retirar meu consentimento a qualquer momento da realização dessa pesquisa, sem nenhum prejuízo ou penalização.
8. Para qualquer dúvida ou solicitação de esclarecimentos poderei entrar em contato com a equipe científica do projeto pelo telefone: (35)8433-3955 (Alessandra – celular) e (16)3301-6930 (Profa. Dra. Magali Monteiro – sala) ou ainda pelo e-mail: aleferrarezi@hotmail.com.
9. Para notificação de qualquer situação relacionada com a ética, que não puder ser resolvida pelos pesquisadores, deverei entrar em contato com o Comitê de Ética em Pesquisa da Universidade de Ribeirão Preto, UNAERP, pelo telefone (16)3603-6779.

Diante dos esclarecimentos prestados concordo em participar, como voluntária (o), do estudo: “A expectativa do consumidor como ferramenta para o desenvolvimento de bebida funcional à base de fruta destinada aos jovens adultos”.

_____, _____ de _____ de 2011.

 Assinatura do voluntário

 Assinatura do Pesquisador
 RG. 41.758.551-2
 Rodov. Araraquara-Jaú, Km 01,
 Araraquara-SP

ANEXO 2



COMISSÃO DE ÉTICA

PARECER Nº 06/CEUP/2013

**PARECER DA COMISSÃO DE ÉTICA DA UNIVERSIDADE DO PORTO
SOBRE O PROJETO COM O TÍTULO:**

**A expectativa do consumidor como ferramenta para o desenvolvimento de uma bebida funcional à
base de fruta destinada aos jovens adultos**

SUBMETIDO POR :

Victor Manuel Conceição Viana
Professor Associado Convidado (FCNAUP)
Orientador

ENTIDADES PROMOTORAS DO ESTUDO:

Departamento de Alimentos e Nutrição - Faculdade de Ciências Farmacêuticas da Universidade Estadual Paulista Júlio Mesquita Filho (Brasil) e Faculdade de Ciências da Nutrição e Alimentação da Universidade do Porto (FCNAUP)

Relator: Profa. Doutora Fernanda Bahia
18 junho 2013

Objetivo do estudo:

Avaliação da expectativa do consumidor usando a técnica do Discurso do Sujeito Colectivo (DSC), como ferramenta para o desenvolvimento de uma bebida funcional à base de fruta destinada aos jovens adultos.

Metodologia:

Recolha de informação através do método qualitativo da entrevista, analisada posteriormente segundo a técnica DSC

Aponta para um procedimento com a sequência seguinte:

- a) seleção dos ginásios;
- b) seleção dos participantes em cada ginásio, tendo em conta os critérios de inclusão/exclusão;
- c) entre os participantes selecionados, constituirão a amostra os que aceitarem e assinarem o Termo do Consentimento Informado;
- d) realização de um pré-inquérito, num grupo de 10 sujeitos, com o objetivo de verificar a validade do Inquérito (Anexo 2) e da Entrevista previamente definida (Anexo 3);
- e) os inquéritos e entrevistas são gravados e posteriormente transcritos;
- f) as respostas à entrevista, transcritas em papel, serão analisadas através da técnica DSC; são classificadas as ideias-centrais (ICs) e as expressões-chave (ECHs) que permitirão elaborar o discurso de cada entrevistado.

Comentários:

1. Achamos globalmente positiva a colaboração entre investigadores de países diferentes, onde este projeto está inserido. Após solicitação da CEUP, foram dados esclarecimentos e enviados elementos adicionais, tais como uma declaração da Diretora da FCNAUP sobre a realização do projeto e o CV da estudante de doutoramento.
2. O Formulário de submissão foi revisto.
3. Finalidade do parecer: foi esclarecido pelo orientador que havia sido solicitado pela Comissão de Ética da Universidade de Ribeirão Preto, tendo sido o real motivo da solicitação do parecer à CEUP, dada a segunda fase do trabalho já ter sido efetuada.
4. *Descrição do projeto:* Foi esclarecido que a bebida a desenvolver constituirá uma hipótese de trabalho e que se trata, por agora, apenas de uma simulação. Também foi enviada bibliografia que respeita temas nutricionais e legislativos brasileiros. A metodologia do trabalho, realizado com base na técnica do Discurso do Sujeito Colectivo (DSC), a usar como ferramenta, é de autores que trabalham no Brasil.
5. Foi indicado que o *critério da seleção dos ginásios* da cidade do Porto foi a proximidade com o polo da Asprela e a facilidade de deslocação da investigadora.
6. O número mínimo da participantes não é quantificado, por se tratar de amostra de conveniência (método qualitativo), obtida até saturação da informação.
7. *Consentimento informado:* Mesmo depois do trabalho já ter sido realizado, mas para eventuais trabalhos futuros, foi recomendado ao orientador que deveria ser assinado por ambos, ficando uma cópia com o participante e outra para o investigador.

8. *Confidencialidade e anonimato*: Assegura-se a guarda de confidencialidade e o anonimato nos inquéritos e nas gravações de voz. Os dados, enquanto arquivados pela investigadora, são disponibilizados para consulta das entidades académicas competentes (por exemplo, Instituição responsável pelo doutoramento). Após a finalização do trabalho, os dados serão destruídos.
9. *Risco/benefício*: Não são previstos riscos e, dado o desenvolvimento do estudo constituir hipótese, não são assinalados benefícios.
10. *Duração do projeto*: O projeto teve início no Brasil, em 2012/06/01, e a segunda fase (realizada em Portugal) foi já concluída. A investigadora encontra-se atualmente no Brasil, a preparar a organização dos resultados, tendo apresentado um relatório preliminar à FCNAUP.
11. Como foi dado conhecimento à CEUP, o parecer do Comité de Ética em Pesquisa para Seres Humanos da Universidade de Ribeirão Preto suscitou o pedido de *informações sobre segurança/toxicidade da medicação, para a possibilidade de acompanhamento do estudo*. A este respeito, o orientador da fase do projeto realizada em Portugal, põe a hipótese de se tratar de um modelo usado pelo Comité daquela Universidade, que não foi adaptado ao caso presente, dado não haver lugar neste projeto a qualquer administração de medicação.

Conclusões:

Apesar de o pedido do parecer ter sido feito *a posteriori*:

- considera-se positiva a colaboração entre investigadores de países diferentes;
- o grau de doutor vai ser conferido pela Universidade de Ribeirão Preto, que já emitiu o seu parecer;
- as informações adicionais prestadas às questões por nós levantadas foram consideradas satisfatórias; e
- que a orientação pedida pela FCNAUP se restringiu a assegurar o procedimento proveniente do Brasil e com a fase já finalizada;

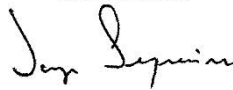
a CEUP decidiu emitir **parecer final favorável** a este projeto.

O Relator



Prof. Doutora Fernanda Bahia

O Presidente



Prof. Doutor Jorge Sequeiros

TERMO DE CONSENTIMENTO LIVRE E ESCLARECIDO

Eu, _____ Estado Civil: _____
Idade: _____ anos Morada: _____ Cidade: _____
Telefone: _____ E-mail: _____

Declaro ter sido esclarecido sobre os seguintes pontos:

1. O trabalho tem por finalidade investigar a expectativa de jovens adultos sobre bebidas funcionais à base de fruta.
2. Ao participar do projeto, além de colaborar para o desenvolvimento de um projeto de pesquisa, estarei contribuindo para avaliar a expectativa de consumidores jovens adultos sobre bebidas funcionais à base de fruta.
3. A minha participação como voluntário terá a duração de aproximadamente 20-30min.
4. Não terei nenhuma despesa ao participar desse estudo.
5. Os procedimentos aos quais serei submetido não provocarão danos físicos ou financeiros e por isso não haverá a necessidade de ser indenizado por parte da equipe responsável por esse trabalho.
6. Meu nome será mantido em **sigilo**, assegurando assim a minha **privacidade** e, se desejar, serei informado sobre os resultados dessa pesquisa pela pesquisadora Alessandra Menegario pelo e-mail: aleferrarezi@hotmail.com.
7. Poderei me recusar a participar ou mesmo retirar meu consentimento a qualquer momento da realização dessa pesquisa, sem nenhum prejuízo ou penalização.
8. Para qualquer dúvida ou solicitação de esclarecimentos poderei entrar em contato com a equipe científica do projeto na FCNAUP ou pelo e-mail: aleferrarezi@hotmail.com.

Diante dos esclarecimentos prestados concordo em participar, como voluntária (o), do estudo: “A expectativa do consumidor como ferramenta para o desenvolvimento de bebida funcional à base de fruta destinada aos jovens adultos”.

_____, _____ de _____ de 2012.

Assinatura do voluntário

Assinatura do Pesquisador
FCNAUP
Rua Dr. Roberto Frias, 4200-465
Porto-Portugal

APÊNDICE 1

Questionário de pesquisa (Brasil)

Academia: _____

Nome: _____ Data: _____

Telefones: _____ E-mail: _____

Sexo: () Masculino () Feminino Idade: _____ anos

Profissão: _____ Trabalha atualmente? () Sim () Não

DADOS PESSOAIS

1. Estado civil

- () Solteiro
() Casado
() Divorciado/viúvo

2. Grau de escolaridade

- () Fundamental completo/ 1º Grau completo
() Médio completo/ 2º Grau completo
() Superior completo
() Pós-graduação

3. Situação atual de moradia

- () casa/apartamento com a família
() pensão/pensionato/hotel
() república (casa/apto/kitnet alugado com amigos)
() casa/apartamento/kitnet (sozinho)

4. Renda: Considere renda familiar se morar com a família e renda pessoal para as demais opções de moradia

- () Mais de ½ a 1 salário mínimo
() Mais de 1 a 2 salários mínimos
() Mais de 2 a 5 salários mínimos
() Mais de 5 a 10 salários mínimos
() Mais de 10 salários mínimos

5. Você possui alguma doença como obesidade, diabetes, hipertensão, hipercolesterolemia, gastrite, anemia, desnutrição, osteoporose, anorexia ou bulimia?

- () Sim → Qual(is)? _____
() Não

6. Algum dos moradores do seu domicílio apresenta condição de saúde ou doença que necessite de restrições alimentares?

- () Sim → Qual(is) condição(ões)? _____
() Não

7. Indique a frequência com que você pratica exercício físico na academia de ginástica, por semana.

- () Uma () Duas () Três () Quatro () Cinco () Seis

8. Há quanto tempo você frequenta academia de ginástica? _____

DADOS DE CONSUMO

9. Utilizando a escala abaixo, indique o quanto você gosta ou desgosta de bebidas (não-alcoólicas):

- (9) Gosto muitíssimo
(8) Gosto muito
(7) Gosto moderadamente
(6) Gosto ligeiramente
(5) Nem gosto/ nem desgosto
(4) Desgosto ligeiramente
(3) Desgosto moderadamente
(2) Desgosto muito
(1) Desgosto muitíssimo
- () Suco recém preparado com a fruta, no momento do consumo (em casa, bares, restaurantes, etc.)
() Suco e néctar pronto para beber (Del Valle, Su Fresh, Maguary, Fruthos)
() Suco preparado a partir de suco concentrado (Maguary, Dafruta, Imbiara, Jal)
() Refresco em pó (Tang, Fit, Clight)
() Refresco pronto para beber (Skinka, Kapo)
() Chá pronto para beber (Feel Good, Nestea, Matte Leão)
() Isotônico (Gatorade, Hidrotônico, Marathon)
() Água mineral (Nestlé, Bonafont, Minalba)
() Refrigerante (Coca-cola, Fanta, Sprite, H₂OH)
() Energético (Redbull, TNT)
() Bebida à base de soja (Ades, Mais Vita, Soyos)

10. Indique a frequência com que você costuma consumir os diferentes tipos de bebidas, utilizando a escala abaixo.

1. nunca
2. raramente (até 1 vez ao mês)
3. eventualmente (até 1 vez por semana)
4. frequentemente (até 3 vezes por semana)
5. sempre (4 ou mais vezes por semana)
- () Suco recém preparado com a fruta, no momento do consumo (em casa, bares, restaurantes, etc.)
() Suco e néctar pronto para beber (Del Valle, Su Fresh, Maguary, Fruthos)
() Suco preparado a partir de suco concentrado (Maguary, Dafruta, Imbiara, Jal)
() Refresco em pó (Tang, Fit, Clight)
() Refresco pronto para beber (Skinka, Kapo)
() Chá pronto para beber (Feel Good, Nestea, Matte Leão)
() Isotônico (Gatorade, Hidrotônico, Marathon)
() Água mineral (Nestlé, Bonafont, Minalba)
() Refrigerante (Coca-cola, Fanta, Sprite, H₂OH)
() Energético (Redbull, TNT)
() Bebida à base de soja (Ades, Mais Vita, Soyos)

11. Você sabe o que são alimentos funcionais?

- () Sim
() Só ouvi falar
() Não

12. Dê exemplos: _____

Questionário de pesquisa (Portugal)

Academia: _____
 Nome: _____ Data: _____
 Telefones: _____ E-mail: _____
 Sexo: () Masculino () Feminino Idade: _____ anos
 Profissão: _____ Trabalha atualmente? () Sim () Não

DADOS PESSOAIS

1. **Estado civil**
 Solteiro
 Casado/vive junto
 Divorciado/viúvo
2. **Grau de escolaridade**
 Até 6º ano
 7º ao 9º ano
 10º ao 12º ano
 Superior completo
 Pós-graduação
3. **Situação atual de moradia**
 casa/apartamento com a família
 pensão/pensionato/hotel
 casa/apartamento/kitnet (alugado com amigos)
 casa/apartamento/kitnet (sozinho)
4. **Renda: Considere renda familiar se morar com a família e renda pessoal para as demais opções de moradia**
 Menos de 475,00 Euros
 Mais de 475,00 a 950,00 Euros
 Mais de 950,00 a 2.375,00 Euros
 Mais de 2.375,00 a 4.750,00 Euros
 Mais de 4.750,00 Euros
5. **Você possui alguma doença como obesidade, diabetes, hipertensão, hipercolesterolemia, gastrite, anemia, desnutrição, osteoporose, anorexia ou bulimia?**
 Sim → Qual(is)? _____
 Não
6. **Algum dos moradores do seu domicílio apresenta condição de saúde ou doença que necessite de restrições alimentares?**
 Sim → Qual(is) condição(ões)? _____
 Não
7. **Indique a frequência com que você pratica exercício físico na academia de ginástica, por semana.**
 Uma () Duas () Três () Quatro () Cinco () Seis
8. **Há quanto tempo você frequenta academia de ginástica?** _____

DADOS DE CONSUMO

9. **Utilizando a escala abaixo, indique o quanto você gosta ou desgosta de bebidas (não-alcoólicas):**
 (9) Gosto muitíssimo
 (8) Gosto muito
 (7) Gosto moderadamente
 (6) Gosto ligeiramente
 (5) Nem gosto/ nem desgosto
 (4) Desgosto ligeiramente
 (3) Desgosto moderadamente
 (2) Desgosto muito
 (1) Desgosto muitíssimo
 () Sumo recém preparado com a fruta, no momento do consumo (em casa, bares, restaurantes, etc.)
 () Sumo e néctar pronto para beber (Ceres, Don Simon, Compal)
 () Sumo preparado a partir de sumo concentrado (Menos é mais, Gud, Sunquick)
 () Refresco em pó (Tang)
 () Chá pronto para beber (Nestea, Lipton, Alteza)
 () Isotonicos (Isostar, Powerade, Gatorade)
 () Água mineral (Pedras, Fastio)
 () Refrigerante (Coca-cola, Trina, Fanta)
 () Energético (RedBull, Burn, Powerking)
 () Bebida à base de soja (Vive Soy)
10. **Indique a frequência com que você costuma consumir os diferentes tipos de bebidas, utilizando a escala abaixo.**
 1. nunca
 2. raramente (até 1 vez ao mês)
 3. eventualmente (até 1 vez por semana)
 4. frequentemente (até 3 vezes por semana)
 5. sempre (4 ou mais vezes por semana)
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 () Água mineral (Pedras, Fastio)
 () Refrigerante (Coca-cola, Trina, Fanta)
 () Energético (RedBull, Burn, Powerking)
 () Bebida à base de soja (Vive Soy)
11. **Você sabe o que são alimentos funcionais?**
 () Sim
 () Só ouvi falar
 () Não
12. **Dê exemplos:** _____