UNIVERSIDADE FEDERAL DE CIÊNCIAS DA SAÚDE DE PORTO ALEGRE – UFCSPA
CURSO DE PÓS-GRADUAÇÃO EM CIÊNCIAS DA SAÚDE

Mônica Cristina Broilo

Percepções e atitudes maternas referentes às práticas alimentares adotadas para si e para seu filho nos primeiros anos de vida

Porto Alegre
2016

Mônica Cristina Broilo

Percepções e atitudes maternas referentes às práticas alimentares adotadas para si e para seu filho nos primeiros anos de vida

Tese submetida ao Programa de Pós-Graduação em Ciências da Saúde da Fundação Universidade Federal de Ciências da Saúde de Porto Alegre como requisito para a obtenção do grau de Doutor em Ciências da Saúde.

Orientadora: Profa. Dra. Daniela Centenaro Levandowski
Co-orientadora: Profa. Dra.Lucia Marques Stenzel

Porto Alegre
2016

Catalogação na Publicação

Broilo, Mônica Cristina
Percepções e atitudes maternas referentes às práticas alimentares adotadas para si e para seu filho nos primeiros anos de vida / Mônica Cristina Broilo. -- 2016.
106 f. : 30 cm.

Tese (doutorado) -- Universidade Federal de Ciências da Saúde de Porto Alegre, Programa de Pós-Graduação em Ciências da Saúde, 2016.

Orientador(a): Daniela Centenaro Levandowski ; coorientador(a): Lucia Marques Stenzel.

1. percepção. 2. mães. 3. criança. 4. hábitos alimentares. 5. mulheres. I. Título.

Sistema de Geração de Ficha Catalográfica da UFCSPA com os dados fornecidos pelo(a) autor(a).

Dedicatória

Dedico este trabalho aos meus filhos Antônio e Francisco, razões do meu viver. Com vocês aprendo sobre a vida, o amor e a energia que nos move a todo instante. Por vocês e para vocês são dedicadas todas as minhas ações e intenções!

Antônio, meu companheiro nos últimos 3 anos, contigo aprendi, além de tudo, sobre a prática por trás de toda esta Tese. Vivi contigo o que as mães e crianças deste estudo também viveram. Meu aprendizado foi intenso, 24 horas por dia. Te amo!

Francisco, meu companheiro ainda na barriga, contigo viverei novamente tudo isso, na certeza de que cada aprendizado será novo e intenso. Te amo!

Agradecimentos

Aos meus pais, Ademar Broilo e Ladir Broilo, pelo exemplo de vida e de trabalho dedicado. O que aprendi dentro de casa, vendo vocês, me leva cada dia a perseguir meus sonhos com determinação e a certeza de que eu posso tudo aquilo a que eu me propuser. Mãe, em especial, te agradeço pelo amor dispensado à mim e principalmente ao Antônio. Sem ti, tua presença, tua figura, nenhum passo meu seria possível, obrigada!

Ao meu marido, Bruno Reisntein, por me incentivar, questionar, apoiar e admirar nessa caminhada. Me orgulho quando te percebo o maior apoiador e incentivador do aleitamento materno e da alimentação complementar saudável e de tantas outras questões que fazem parte da minha vida profissional. Sabes que sem este teu suporte nada disso seria possível, obrigada!

À Professora Daniela Centenaro Levandowski, minha orientadora, por me receber e orientar sempre de braços e coração abertos. Pelos ensinamentos, dedicação e exemplos na busca por um trabalho feito com qualidade e amor. Só desta forma o trabalho faz sentido, obrigada!

À Professora Lucia Marques Senzel, minha co-orientadora, que me acompanha desde o Mestrado e com quem pude aprender profissionalmente, mas principalmente pessoalmente, como ser uma pesquisadora e docente apaixonada pelo que faz. És uma fonte imensa de inspiração, obrigada!

À Professora Márcia Regina Vitolo, minha orientadora de Mestrado e coordenadora no NUPEN, com quem muito aprendi e que me permitiu seguir com os trabalhos relacionados ao seu grupo, obrigada!

Às colegas e amigas do NUPEN, com quem tive o grande prazer de conviver por alguns anos e com as quais continuo aprendendo a cada dia. Vocês todas foram essenciais na minha formação profissional, mas, mais do que isso, tornaram-se grandes amigas. Com vocês aprendi que um grupo que permanece unido produz trabalho de qualidade com grande felicidade. Levo para a vida, obrigada!

A todos os Professores do Programa de Pós Graduação em Ciências da Saúde com quem pude aprender muito durante esses anos de caminhada, obrigada!

Às Professoras do Departamento de Nutrição desta Universidade com as quais tive o prazer de conviver e aprender em atividades diversas, durante os anos do Mestrado e Doutorado, obrigada!

À Coordenação de Aperfeiçoamento de Pessoal de Ensino Superior (CAPES) pela bolsa de estudos concedida durante os anos do Doutorado e que oportunizaram a produção de conhecimento, obrigada!

Às mães e crianças participantes deste estudo por contribuírem para construção do conhecimento científico e do meu conhecimento pessoal, obrigada!

Resumo

Objetivos: o objetivo desta tese foi de analisar as percepções e as atitudes maternas referentes às práticas alimentares adotadas para si e para seu filho nos primeiros anos de vida, bem como as características maternas e familiares que podem estar associadas a estas percepções e atitudes. Para tal, foram desenvolvidos dois artigos científicos. O primeiro objetivou analisar a percepção materna sobre as práticas alimentares adotadas para si e para seu filho nos primeiros anos de vida, assim como as possíveis características maternas e familiares envolvidas nestas percepções. Já o segundo, foi identificar os tipos de estratégias utilizadas por mães de crianças de 2 a 3 anos de idade para estimular/garantir o seu consumo alimentar, bem como sua percepção sobre estes comportamentos, além de investigar características maternas e familiares que podem estar associadas aos diferentes tipos de estratégias empregadas pelas mães. **Métodos:** os achados da presente tese derivam de um estudo maior, que teve um delineamento de ensaio de campo randomizado por conglomerados. Foram identificadas gestantes atendidas durante o terceiro trimestre gestacional em unidades de saúde de Porto Alegre/RS. Estas tiveram suas crianças acompanhadas por meio de visitas domiciliares aos 6 a 9 meses, 12 a 16 meses e 2 a 3 anos de idade. Para os artigos que compõem essa tese, a amostra foi tratada como uma coorte aninhada a um ensaio de campo randomizado, pois a intervenção realizada no estudo original não teve impacto sobre as variáveis aqui analisadas. Todos os procedimentos realizados para este estudo foram analisados e aprovados pelo Comitê de Ética em Pesquisa da presente Universidade. **Resultados e Conclusões:** os resultados obtidos mostraram que as percepções maternas

sobre alimentação saudável diferiram para si e em relação ao filho, embora os critérios que norteiem estas percepções tenham se apresentado de forma semelhante. A escolaridade materna foi associada às percepções maternas de forma diferente, considerando as percepções em relação à própria alimentação e à alimentação da criança. Ainda, mães de crianças aos 2 a 3 anos de idade referiram utilizar inúmeras estratégias objetivando o consumo alimentar infantil considerado adequado por si próprias, muitas vezes sem intenção ou percepção clara sobre essa utilização. Características como a idade e a escolaridade mostraram-se associadas aos tipos de estratégias utilizadas. Estes achados demonstram a importância do estudo da percepção no que tange às práticas alimentares maternas para crianças nos primeiros anos de vida, indicando o quanto as percepções maternas podem estar relacionadas às suas práticas referentes à alimentação, tanto para si quanto para seu filho. Assim, ações voltadas à educação alimentar e nutricional na primeira infância devem levar em considerações os aspectos subjetivos das mães, visando a maior efetividade.

Abstract

Objectives: This thesis aimed to analyze mothers' perceptions and attitudes about the dietary practices they adopt for themselves and for their children in the first years of life as well as the maternal and family characteristics that may be associated with these perceptions and attitudes. Two scientific articles were developed for this purpose. The first article aimed to analyze mothers' perceptions of the dietary practices they adopt for themselves and for their children in the first years of life as well as the potential maternal and family characteristics involved in these perceptions. The second article aimed to identify the types of strategies used by the mothers of children aged 2-3 to stimulate/ensure their food consumption as well as their perceptions of these behaviors and also to investigate the maternal and family characteristics that may be associated with the different types of strategies used by the mothers. **Methods:** This thesis's findings are derived from a larger study (a cluster-randomized field trial). Women in their third trimester of pregnancy were identified at public health clinics in Porto Alegre, Brazil. The children of these mothers were followed through home visits at age 6-9 months, 12-16 months and 2-3 years. For the articles that comprise this thesis, the sample was treated as a nested cohort to a randomized field trial, as the intervention conducted in the original study had no impact on the variables analyzed here. All procedures performed for this study were reviewed and approved by the Research Ethics Committee of this University. **Results and Conclusions:** The results obtained showed that the mothers' perceptions of healthy eating differed for themselves and for their children, although the criteria that guided these perceptions were presented in a similar manner. Maternal educational level was associated with

different maternal perceptions, both in regard to their own diets and those of their children. The mothers of the children aged 2-3 reported using several strategies to promote their children's food consumption that they considered appropriate for themselves—often without clearly intending or perceiving this use. Characteristics such as maternal age and educational level were shown to be associated with the types of strategies used. These findings demonstrate the importance of studying perceptions of maternal feeding practices for children in the first years of life, indicating to what extent mothers' perceptions may be related to their dietary practices—both for themselves and for their children. Thus, actions to promote dietary and nutritional education in early childhood should consider the subjective aspects of mothers in order to be more effective.

Lista de Abreviaturas

ENPACS – Estratégia Nacional para a Alimentação Complementar Saudável

HDL - *High Density Lipoprotein*

HIV - *Human Immunodeficiency Virus*

IBGE – Instituto Brasileiro de Geografia e Estatística

IMC – Índice de Massa Corporal

MS – Ministério da Saúde

OMS – Organização Mundial de Saúde

PAHO – *Pan-American Health Organization*

PHC – *Public Health Center*

SPSS – *Statistical Package for Social Science*

SUS – Sistema Único de Saúde

UFCSPA – Universidade Federal de Ciências da Saúde de Porto Alegre

WHO – *World Health Organization*

Sumário

APRESENTAÇÃO

Esta tese de Doutorado, intitulada “Percepções e atitudes maternas referentes às práticas alimentares adotadas para si e para seu filho nos primeiros anos de vida”, deriva de pesquisa realizada pelo Núcleo de Pesquisa em Nutrição (NUPEN), da Universidade Federal de Ciências da Saúde de Porto Alegre (UFCSPA), coordenado pela Profa. Márcia Regina Vitolo. Esse grupo de pesquisa que desenvolve estudos na área de Nutrição Infantil e Epidemiologia Nutricional, mais especificamente em diagnóstico nutricional de indivíduos e comunidades, impacto de implementação de estratégias de intervenção dietéticas com ênfase na promoção do Aleitamento Materno e Alimentação Complementar Saudável, identificação de fatores de risco precoce associados ao desenvolvimento de doenças crônicas não transmissíveis e no diagnóstico, promoção e intervenções em Saúde Bucal na Primeira Infância.

A partir dos resultados de estudos desenvolvidos pela equipe do NUPEN, e do próprio estudo de Mestrado da autora, intitulado “Atitudes Maternas em Relação às Orientações de Profissionais de Saúde Referentes a Práticas Alimentares no Primeiro Ano de Vida”, foi possível perceber que as práticas alimentares adotadas pelas mães para seus filhos pequenos são diversas e influenciadas por inúmeros fatores.

Nesse sentido, no Doutorado, a proposta foi avaliar alguns desses fatores de influência, tendo como foco os aspectos subjetivos das mães, particularmente as suas percepções e atitudes relacionadas a práticas alimentares nos primeiros anos de vida da criança. Objetivou-se compreender as suas percepções sobre alimentação saudável, tanto para si como para o filho, além de suas percepções frente às práticas alimentares adotadas em relação à alimentação da criança, com ênfase nas estratégias empregadas para garantir a alimentação infantil.

Este estudo deriva de um projeto de pesquisa amplo, denominado "Implementação dos Dez Passos para Alimentação Saudável para Crianças menores de 2 anos nas Unidades Básicas de Saúde", o qual foi iniciado pelo NUPEN no ano de 2007, na cidade de Porto Alegre, Rio Grande do Sul. O

projeto foi desenvolvido por uma equipe interdisciplinar, sob coordenação da Profa. Dra. Márcia Regina Vitolo.

Essa tese de Doutorado é composta por Introdução, que busca contextualizar o tema em estudo, e por dois artigos científicos, intitulados: 1) Mothers' Perceptions of Their Own Diets and the Diets of Their Children at 2-3 Years of Age, e 2) "What can I do when he/she doesn't want to eat?": Maternal Strategies for Ensure Children's Food Consumption in Early Childhood. Ao final, constam as Considerações Finais da tese, que visam apontar reflexões e perspectivas futuras para a pesquisa e para assistência a mães de crianças pequenas.

1. REVISÃO DA LITERATURA

1.1. A Importância da Alimentação para a Saúde na Infância

Alimentação saudável é aquela que visa suprir o organismo com os nutrientes responsáveis pelas atividades básicas de manutenção do equilíbrio de processos fisiológicos indispensáveis à vida. Esses nutrientes são utilizados para a produção da energia necessária à manutenção dos processos fisiológicos e neurofisiológicos, como síntese de hormônios, neurotransmissores, citoesqueleto e membranas celulares, entre outros (AGUIAR, AGUIAR & GUEDES, 2013).

A alimentação ofertada à criança, desde o início da vida, irá influenciar ou mesmo determinar seu estado nutricional e de saúde na infância, adolescência e possivelmente ao longo da vida adulta. Como o primeiro alimento oferecido à criança comumente é o leite materno, estudos demonstram que o aleitamento materno possui interação direta com o índice de massa corporal (IMC)~~,~~ (ROBINSON, et al., 2009), a velocidade de ganho de peso (GRIFFITHS et al., 2009) e a velocidade de crescimento e adiposidade (BAIRD et al., 2008). Por outro lado, o aleitamento materno encontra-se inversamente associado à obesidade na infância e na vida adulta (Horta, Loret de Mola & Victora, 2015).

A literatura destaca que o aleitamento materno pode proteger a criança na primeira infância contra doenças como enterocolites, otites, dermatites atópicas, gastroenterites, doenças do trato respiratório e morte súbita (CHAVES, 2013; WHO, 2001). Além disso, em crianças maiores, protege contra carência de ferro, doenças infecciosas gastrointestinais e pulmonares (CHAVES, 2013; WHO, 2001). Entretanto, essa prática pode ter seus benefícios postergados até a vida adulta, por meio da proteção contra o excesso de peso e obesidade e doenças como as cardiovasculares e câncer (VICTORA et al., 2016). Além disso, não se pode desconsiderar os benefícios do AM em termos de desenvolvimento emocional e intelectual da criança (VICTORA et al., 2016). Disso se depreende os achados de estudos recentes

de revisão da literatura, que destacam que os investimentos realizados na promoção do aleitamento materno são os que dão maior retorno em termos de políticas públicas no mundo (HANSEN, 2016; ROLLINS et al., 2016).

Como comentado, as práticas alimentares infantis se iniciam logo após o nascimento, com o estabelecimento ou não do aleitamento materno e, na sequencia, com a introdução da alimentação complementar. A alimentação complementar, tanto do ponto de vista da idade de sua introdução quanto da qualidade da dieta oferecida, também exerce papel fundamental no desenvolvimento da criança e na sua programação metabólica (MICHAELSEN et al., 2010). Os achados de estudos realizados sobre o tema evidenciam relação direta entre adequadas práticas alimentares adotadas para as crianças e desfechos positivos em saúde, relacionados ao perfil lipídico, sintomas respiratórios e saúde bucal, entre outros (VITOLO et al., 2012; LOUZADA et al., 2012; STRASSBURGER et al., 2010; FELDENS et al., 2010; VITOLO et al., 2008). Particularmente, estudo de revisão sistemática indicou que em todos os trabalhos em que foram implementadas ações de educação alimentar e nutricional voltadas à adequada introdução da alimentação complementar, em países em desenvolvimento, como é o caso do Brasil, foram obtidos desfechos em saúde favoráveis às crianças, como ganho pôndero-estatural adequado, aumento positivo na circunferência do braço, bem como redução da morbidade (MAJAMANDA et al., 2014).

Nessa mesma perspectiva, no Brasil, diversos estudos randomizados têm demonstrado os impactos positivos de programas que utilizaram educação alimentar e nutricional, voltados às adequadas práticas de introdução da alimentação complementar (VITOLO et al., 2012; LOUZADA et al., 2012; STRASSBURGER et al., 2010; FELDENS et al., 2010a; VITOLO et al., 2008). Com relação ao consumo alimentar, estudo demonstrou que mães que receberam orientações sobre práticas alimentares durante os primeiros meses de vida do bebê ofereciam alimentação mais saudável para seus filhos, sendo que as crianças pertencentes ao grupo intervenção apresentaram redução de 40% no consumo de alimentos ricos em açúcar e de 50% em alimentos ricos em gordura. Além disso, as crianças que foram amamentadas por mais de seis meses apresentaram menor risco no consumo destes tipos de alimentos (VITOLO et al., 2012). Em crianças maiores, estudo demonstrou menor

consumo de alimentos de alta densidade energética entre os 12 e 16 meses de idade e entre os 3 e 4 anos de idade, em crianças cujas mães receberam orientações nutricionais nos seus primeiros meses de vida. Aos 7 e 8 anos de idade, os desfechos clínicos em saúde foram evidentes, pois as crianças do grupo cujas mães receberam esse tipo de intervenção apresentaram maiores níveis de HDL-colesterol e menores níveis de triglicerídeos em relação àquelas do grupo controle (LOUZADA et al., 2012).

Quanto a desfechos relacionados às patologias do sistema respiratório, frequentes na primeira infância, estudo demonstrou que um programa de educação nutricional teve impacto positivo também na redução de sintomas respiratórios em crianças. No grupo intervenção 23,3% possuíam sintomas como tosse, obstrução nasal, rinorreia ou dispneia, contra 39,7% no grupo controle. Também o risco de sintomas de morbidade respiratória foi 41% menor entre o grupo intervenção (VITOLO et al., 2008). Da mesma forma, estudo randomizado sobre a alimentação complementar demonstrou que a introdução precoce de leite de vaca, prática contra indicada pelas diretrizes brasileiras (BRASIL, 2010a), foi um desencadeador de sintomas de asma aos 4 anos de idade da criança. Crianças que receberam leite de vaca antes dos 4 meses de idade apresentaram chances três vezes maiores de terem asma aos 4 anos de idade. Além disso, o aleitamento exclusivo por mais de 6 meses foi potencialmente associado à proteção ao desenvolvimento de atopia na mesma idade (STRASSBURGER et al., 2010).

Foi encontrada, ainda, associação entre as práticas alimentares no primeiro ano de vida e a incidência de cáries até os 4 anos de idade. Entre as crianças do grupo intervenção, cujas mães receberam orientações alimentares por meio de visitas domiciliares, o aconselhamento reduziu a incidência de cáries em 22%, os casos severos de cáries em 32% e o número de dentes afetados, em comparação ao grupo controle (FELDENS et al., 2010a). Outro estudo, referente à mesma coorte de crianças, identificou que as práticas alimentares que representavam fator de risco para o desenvolvimento de cárie severa precoce foram aleitamento materno ≥ 7 vezes ao dia, enfatizando-se a frequência do aleitamento e não o AM em si, dieta com alta densidade de açúcar, uso de mamadeira para líquidos com exclusão do leite, número de refeições e lanches > 8 e escolaridade materna ≤ 8 anos de estudo (FELDENS

et al., 2010b).

Desta forma, torna-se evidente a relação entre as práticas alimentares adotadas para a criança e os desfechos em saúde na infância. Assim, é de vital importância que as recomendações alimentares e nutricionais voltadas para esta faixa etária sejam adotadas para a criança. A seguir, são abordadas as práticas alimentares recomendadas para crianças pequenas pelos órgãos governamentais brasileiros.

1.1.1 Práticas Alimentares Recomendadas na Primeira Infância

No Brasil, as políticas públicas de atenção básica são voltadas para o estímulo ao aleitamento materno e à introdução da alimentação complementar saudável, principalmente pelo entendimento de que a alimentação adequada é um fator protetivo à saúde da criança e do futuro adulto (BRASIL, 2010a), conforme mencionado anteriormente. O programa nacional denominado Estratégia Amamenta e Alimenta Brasil, criado em 2012, integra outros dois programas: a Rede Amamenta Brasil (BRASIL, 2011) e a Estratégia Nacional para a Alimentação Complementar Saudável (ENPACS) (BRASIL, 2010b). Esse programa nacional tem ações voltadas ao estímulo destas práticas (aleitamento materno e introdução de alimentação complementar saudável), capacitando tutores entre os profissionais de saúde da atenção primária para multiplicarem os conhecimentos e ações entre os demais profissionais de saúde. Com isso, crianças e famílias atendidas pelo Sistema Único de Saúde (SUS) são beneficiadas.

O Ministério da Saúde (MS) do Brasil recomenda, baseado nas orientações da Organização Mundial da Saúde (OMS), que crianças menores de seis meses de idade recebam apenas leite materno, sem o oferecimento de nenhum outro tipo de líquido ou alimento, e que continuem sendo alimentadas com leite materno até os dois anos de idade ou mais (BRASIL, 2010a). Tal recomendação baseia-se principalmente em evidências que demonstram os benefícios da amamentação do ponto de vista nutricional, imunológico, metabólico, ortodôntico, fonoaudiológico, afetivo, econômico e social

(CHAVES, 2013). Após os 6 meses de idade, a criança está apta a receber outros tipos de alimentos que não o leite materno, o que se entende por introdução da alimentação complementar. De acordo com o MS, esta alimentação deve ser oferecida de forma lenta e gradual, acompanhada de leite materno em livre demanda e respeitando a aceitação da criança (BRASIL, 2010a). Além disso, pelo menos até os 2 anos de idade são contra indicados alimentos processados e produtos ultraprocessados (como conservas, embutidos, biscoitos recheados, refrigerantes, macarrão intantâneo, entre outros), devendo ser a base da alimentação da criança os alimentos in natura ou minimamente processados (BRASIL, 2010a; BRASIL, 2014). Entre os 6 meses de idade e o primeiro ano de vida, os alimentos devem ser oferecidos de forma amassada, não sendo batidos, liquidificados ou peneirados, com o objetivo de que a criança se habitue ao sabor e à consistência dos mesmos, e que, por volta do primeiro ano de vida, possa receber a comida habitual da família (BRASIL, 2010a). As orientações sobre a introdução da alimentação complementar fazem parte do programa “Dez passos para uma alimentação saudável para crianças menores de dois anos” do MS (2010) e constam no Quadro 1.

Quadro 1: Dez passos para uma alimentação saudável para crianças menores de dois anos.

Passo 1	Dar somente leite materno até os 6 meses, sem oferecer água, chás ou qualquer outro alimento.
Passo 2	Ao completar 6 meses, introduzir de forma lenta e gradual outros alimentos, mantendo o leite materno até os dois anos de idade ou mais.
Passo 3	Ao completar 6 meses, dar alimentos complementares (cereais, tubérculos, carnes, leguminosas, frutas e legumes) três vezes ao dia, se a criança estiver em aleitamento materno.
Passo 4	A alimentação complementar deve ser oferecida de acordo com os horários de refeição da família, em intervalos regulares e de forma a respeitar o apetite da criança.
Passo 5	A alimentação complementar deve ser espessa desde o início e oferecida de colher; iniciar com a consistência pastosa (papas/purês) e, gradativamente, aumentar a consistência até chegar à alimentação da família.
Passo 6	Oferecer à criança diferentes alimentos ao dia. Uma alimentação variada é uma alimentação colorida.
Passo 7	Estimular o consumo diário de frutas, verduras e legumes nas refeições.

Passo 8	Evitar açúcar, café, enlatados, frituras, refrigerantes, balas, salgadinhos e outras guloseimas, nos primeiros anos de vida. Usar sal com moderação.
Passo 9	Cuidar da higiene no preparo e manuseio dos alimentos; garantir o seu armazenamento e conservação adequados.
Passo 10	Estimular a criança doente e convalescente a se alimentar, oferecendo sua alimentação habitual e seus alimentos preferidos, respeitando a sua aceitação.

Após os dois primeiros anos de vida, a criança já está totalmente apta para receber a alimentação habitual da família, tendo em vista que esta alimentação deve ser saudável, variada, englobando alimentos in natura e minimamente processados como base restringindo o consumo de alimentos processados e evitando o consumo de produtos ultraprocessados (BRASIL, 2014). Os produtos ultraprocessados podem ser considerados todos aqueles formulados basicamente por ingredientes industriais, que possuem pouco ou nenhum alimento em sua composição. Tais produtos são considerados nutricionalmente desequilibrados, devido ao elevado teor de gordura, açúcar ou sal. Do mesmo modo, estes produtos podem ser ricos em gorduras saturadas ou gorduras *trans*, além de conter ingredientes que proporcionam hiperpalatabilidade. Devido a isso, podem estar relacionados à formação de hábitos alimentares não saudáveis e até mesmo gerar compulsão ou dependência (BRASIL, 2014).

Desta forma, como as práticas alimentares adotadas pelos pais para os seus filhos na primeira infância terão impacto no estado nutricional infantil e nos seus desfechos em saúde ainda na infância e ao longo da vida, devem ser orientadas e acompanhadas por gestores e profissionais de saúde. Esse fato é ainda mais relevante quando se considera o panorama atual das condições de alimentação e nutrição infantil.

1.1.2 Situação Alimentar Infantil no Brasil

Sabe-se que a população brasileira, seguindo tendância mundial, vem passando por um período de intensa transição nutricional, caracterizado pela redução dos casos de desnutrição, com consequente aumento do excesso de peso e obesidade, nas mais diferentes faixas etárias (CONDE & MONTEIRO,

2014; MATIJASEVICH et al., 2012). Esta transição é consequência direta da mudança no padrão alimentar populacional, com decréscimo acentuado no consumo de alimentos in natura e minimamente processado, em virtude do aumento exponencial no consumo de alimentos processados e produtos ultraprocessados (COSTA LOUZADA et al., 2015; CANELLA et al., 2014).

Esse padrão de consumo alimentar, prevalente na população adulta, tem se refletido no consumo alimentar infantil, cada vez em idades mais precoces (SPARREMBERGER et al., 2015; IBGE, 2010; VENÂNCIO et al., 2010). Assim, além de a introdução da alimentação complementar acontecer em um tempo não oportuno, com a inclusão de líquidos como chás, sucos e outros leites (que não o leite materno) já no primeiro mês de vida, comida salgada entre 3 e 6 meses da criança, em 18% e 21% dos casos, respectivamente, a inadequação da alimentação oferecida em geral também é preocupante. Cerca de 9% de crianças entre 3 e 6 meses de idade já consomem alimentos não recomendados, como bolachas e salgadinhos, e posteriormente, ao longo do primeiro ano de vida, esses números se ampliam, com 46,4% de consumo destes alimentos entre os 6 e os 9 meses, e 71,7% entre os 9 e os 12 meses (VENÂNCIO et al., 2010).

Estudo de revisão sistemática de pesquisas brasileiras demonstrou que a dieta das crianças apresenta valores energéticos acima das recomendações nutricionais e elevada inadequação para diversos micronutrientes, entre eles, o ferro, a vitamina A e o zinco (CARVALHO et al., 2015). Com relação aos tipos de alimentos consumidos na infância, estudo que analisou o consumo alimentar diário de crianças entre 2 e 10 anos de idade, atendidas em Unidades Básicas de Saúde, indicou que 47% do consumo energético destas crianças é proveniente de produtos ultraprocessados. A pesquisa apontou ainda que, com o passar dos anos, este consumo alimentar agrava-se (SPARREMBERGER et al., 2015).

Em relação ao consumo de alimentos *in natura* ou minimamente processados, base da alimentação conforme as políticas governamentais brasileiras (BRASIL, 2014), estudo randomizado referiu que 58% das crianças em idade pré-escolar analisadas no estudo, não consumiram nenhuma porção de fruta, enquanto mais de 87% não consumiram nenhum tipo de verdura no dia anterior à coleta de dados, indicando alta prevalência de consumo

inadequado destes tipos de alimentos (VALMÓRBIDA & VITOLO, 2014). Outro estudo brasileiro que acompanhou crianças desde o nascimento e analisou desfechos alimentares em idades pré-escolar e escolar, demonstrou que a qualidade da dieta destas crianças está aquém do recomendado. Os autores apontaram consumo insuficiente de grãos, carnes, legumes, verduras e frutas e pouca variedade alimentar, entre as duas faixas etárias analisadas, com consumo elevado de gordura total, colesterol e sódio. Ainda, referiram a diminuição no consumo de frutas e leite e aumento no consumo de gordura saturada, com o passar dos anos (RAUBER, HOFFMAN & VITOLO, 2013).

A partir do exposto, é possível observar que o padrão alimentar infantil atual está aquém do recomendado, tornando-se cada vez mais uma preocupação de pesquisadores, profissionais de saúde e gestores públicos na área (IBGE, 2010; BRASIL, 2010a). Como as práticas alimentares da criança podem influenciar e até mesmo determinar seu comportamento alimentar ao longo da vida, repercutindo nas suas condições de saúde, esse tema deve merecer total atenção dos órgãos governamentais.

1.2. O Comportamento Alimentar e sua Formação

O comportamento alimentar de um indivíduo começa a ser formado ainda no período gestacional (COOKE & FIELDS, 2011; MENNELLA, JAGNOW & BEAUCHAMP, 2001). Os dois ou três primeiros anos de vida são fundamentais neste sentido, principalmente porque neste período acontece o estabelecimento de práticas alimentares muito importantes, como o aleitamento materno, ou uso de outro alimento substituto, a introdução da alimentação complementar e o ingresso da criança na alimentação habitual da família (NICKLAUS, 2015; SCHWARTZ et al., 2011; COOKE & FIELDS, 2011; BEAUCHAMP & MENNELLA, 2009).

Embora, em alguns aspectos, o comportamento alimentar seja influenciado por fatores genéticos, como a preferência inata por alguns sabores - doce, salgado ou umami (VENTURA & WOROBEY, 2013; SCHWARTZ et al., 2009), sabe-se que o ambiente no qual a criança é inserida molda suas preferências alimentares. Os comportamentos experienciados e aprendidos

nos primeiros anos podem determinar o estilo alimentar do indivíduo durante toda a sua vida (MENNELLA, REITER & DANIELS, 2016; VENTURA & WOROBEY, 2013; KRAL & RAUTH, 2010).

Durante a gestação, os alimentos que compõem a dieta da gestante conferem sabor ao líquido amniótico, passando para o bebê a familiaridade a estes alimentos (AGUIAR, AGUIAR & GUEDES, 2013; COOKE & FIELDS, 2011; BEAUCHAMP & MENNELLA, 2009; MENNELLA, JAGNOW & BEAUCHAMP, 2001). De maneira similar, esta influência ocorre durante o período de aleitamento materno, em que a alimentação habitual da nutriz confere sabor e odor ao leite materno, sendo este oferecido ao bebê e determinando a aceitação dos alimentos na fase da introdução da alimentação complementar (COOKE & FIELDS, 2011; MENNELLA, JAGNOW & BEAUCHAMP, 2001). Porém, a exposição direta da criança aos alimentos é um forte influenciador de sua aceitação, sabendo-se que uma criança precisa receber o mesmo alimento entre 8 a 15 vezes, em dias alternados e de diferentes formas, para que possa aprender a reconhecer o alimento como familiar em sua alimentação (BLISSET & FOGEL, 2013; MENNELLA & TRABULSI, 2012).

As preferências alimentares e os padrões dietéticos de um indivíduo estabelecem-se precocemente e geralmente pouco se modificam ao longo do tempo, principalmente em relação ao consumo de frutas, vegetais e alimentos de alta densidade energética e baixa densidade de nutrientes (SKINNER et al., 2002). Estudo demonstrou, em uma coorte de aproximadamente 8.000 crianças, associação positiva entre o consumo, aos 6 meses de idade, de frutas e vegetais preparados em casa, e a maior freqüência no consumo desses alimentos aos 7 anos de idade (COULTHARD et al., 2010). Já em relação à consistência da alimentação, crianças que receberam alimentos grumosos somente após os 10 meses de idade apresentaram problemas alimentares em idade escolar, entre eles, recusa em comer a quantidade suficiente de alimentos durante a refeição e maior exigência quanto à comida. Além disso, crianças que receberam alimentos grumosos tardiamente também apresentaram menor consumo de frutas e vegetais (COULTHARD et al., 2009).

Da mesma forma que as práticas alimentares adequadas dispensadas à criança moldam seu comportamento alimentar futuro, quando estímulos a

alimentos contraindicados, como os produtos ultraprocessados, são proporcionados na primeira infância, esta preferência alimentar tende a perpetuar-se (MENNELLA et al., 2009; FORESTELL & MENNELLA, 2007; MENELLA & BEAUCHAMP, 2005; PEPINO & MENNELLA, 2005; BIRCH, 1998). Estudo que analisou a alimentação de crianças nos primeiros anos de vida e, posteriormente, entre os 6 e os 10 anos de idade, identificou, entre aquelas que receberam água com açúcar rotineiramente durante os primeiros anos de vida, preferência significativamente maior a altos níveis de sacarose aos 6-10 anos de idade, quando comparadas àquelas que foram raramente ou nunca expostas (PEPINO & MENNELLA, 2005).

Assim, fica evidente a importância do estímulo à adoção de adequadas práticas alimentares para crianças desde a vida intrauterina e durante a infância, visando à construção de um comportamento alimentar saudável. Para isso, é importante conhecer os fatores de influência na formação do comportamento alimentar infantil, a fim de promover práticas alimentares saudáveis desde os primeiros anos de vida.

1.2.1 Fatores de Influência na Formação do Comportamento Infantil

Como mencionado, muitos são os fatores de influência na formação do comportamento alimentar infantil, desde fatores genéticos (SCHWARTZ et al., 2009; BIRCH, 1998) àqueles relacionados ao ambiente em que a criança está inserida (BLISSET & FOGEL, 2013; FORESTELL & MENNELLA, 2007; MENNELLA & BEAUCHAMP, 2005). Entretanto, como as características do ambiente são impostas à criança desde muito cedo e permanecem ao longo de boa parte da vida, é provavel que possam moldar seu comportamento de forma mais intensa (VENTURA & WOROBEY, 2013).

Considerando o ambiente da criança na primeira infância, esse é predominantemente formado por seus principais cuidadores, geralmente a família. O ambiente familiar tem grande influência nesta formação de hábitos e comportamentos da criança com relação à alimentação. Sabe-se que vários aspectos, como os modelos parentais, o ambiente alimentar familiar, as

práticas alimentares adotadas para a criança em relação ao aleitamento materno e a idade de desmame são fundamentais. Posteriormente, fatores como a restrição a determinados alimentos, pressão para comer e a adoção de estratégias como insistência e recompensa também tem sido identificados como importantes determinantes dos hábitos alimentares infantis (BLISSET & FOGEL, 2013; KRÖLLER, JAHNKE & WARSCHBURGER, 2013; JANSEN et al., 2012).

Pensando na formação do comportamento alimentar, desde os seus primórdios, os comportamentos maternos tem influência direta na aceitação dos alimentos durante a introdução da alimentação complementar. A dieta praticada pela mãe para si mesma irá influenciar no sabor do líquido amniótico e essa familiaridade beneficiará a aceitação da criança aos sabores no momento oportuno (MENNELLA, JAGNOW & BEAUCHAMP, 2001). Além disso, esse comportamento de aceitação à familiaridade por parte da criança se estende ao período do aleitamento materno pelo mesmo mecanismo de apresentação aos sabores e aromas proporcionados pela alimentação materna (MENNELLA, REITER & DANIELS, 2016; MENNELLA, JAGNOW & BEAUCHAMP, 2001).

Também o modelo parental é um importante determinante do comportamento alimentar infantil, no sentido de que posturas e comportamentos adotados pelos pais para si irão servir como um modelo a para a criança que está inserida neste contexto familiar (BLISSET & FOGEL, 2013; VENTURA & BIRCH, 2008; SCAGLIONI, SALVIONI & GALIMBERTI, 2008). Estudos relacionam as práticas alimentares dos genitores (BLISSET & FOGEL, 2013), suas preferências alimentares (SCAGLIONI, SALVIONI & GALIMBERTI, 2008) e até mesmo seu estilo parental (VENTURA & BIRCH, 2008) com diferentes desfechos alimentares por parte dos filhos. Além disso, o ambiente alimentar que é proporcionado à criança modela seus comportamentos, pois os alimentos disponíveis para a criança, o ambiente familiar durante as refeições e as práticas adotadas pelo pais, no sentido de práticas controladoras, como a pressão para comer, o monitoramento e a restrição a determinados alimentos, influenciam o consumo alimentar infantil em termos quantitativos e qualitativos (BLISSET & FOGEL, 2013). Sabe-se que o fator emocional está envolvido nos mais diversos tipos de aprendizagem,

sendo que emoções positivas beneficiam a adoção de comportamentos, enquanto o estresse e as emoções negativas podem dificultar os aprendizados (COSENZA & GUERRA, 2011), inclusive o alimentar (BLISSET & FOGEL, 2013; SCAGLIONI, SALVIONI & GALIMBERTI, 2008).

Particularmente quanto às práticas adotadas pelos pais no momento da alimentação da criança, como a pressão para comer, o monitoramento constante, a restrição a determinados alimentos ou à quantidade de comida, e o estímulo e a recompensa, são bastante comuns e os estudos tem demonstrado seus efeitos negativos em vários desfechos em saúde para a criança (KRÖLLER, JAHNKE & WARSCHBURGER, 2013; HENDRIE et al., 2013; VENTURA & BIRCH, 2008; SCAGLIONI, SALVIONI & GALIMBERTI, 2008). Estudo de revisão discutiu que o uso de qualquer tipo de estratégia pode comprometer a regulação do controle alimentar infantil, podendo desencadear problemas como distúrbios alimentares, obesidade e restrição alimentar (SCAGLIONI, SALVIONI & GALIMBERTI, 2008). Esses efeitos negativos podem ocorrer tanto no caso de crianças com estado nutricional adequado quanto em crianças que já apresentam alguma inadequação, seja baixo peso ou excesso de peso e obesidade (HENDRIE et al., 2013; JANSEN et al., 2012).

Conforme discutido até então, a influência dos pais na alimentação dos filhos se desenvolve de diversas maneiras e pode ser determinante na adoção de práticas alimentares adequadas ao longo da vida. Porém, devido a maior responsabilidade atribuída à mulher no que diz respeito à criação e alimentação dos filhos, sua influência sobre o comportamento alimentar infantil tende a ser considerada como mais forte, como será explanado a seguir.

1.2.2. Figura Materna

A grande influência da figura materna, em diversos aspectos da vida alimentar dos filhos, reflete a carga de responsabilidade atribuída à mulher na criação da prole, desde os tempos antigos. Questões referentes ao crescimento e desenvolvimento da criança são creditadas majoritariamente à mãe, principalmente àquelas relacionadas à alimentação e à nutrição (MOURA

& ARAÚJO, 2004; RAMOS & ALMEIDA, 2003). Assim, a literatura demonstra a estreita relação de influência entre os comportamentos maternos e os comportamentos desenvolvidos pela criança, desde preferências alimentares, estado nutricional e relações estabelecidas com o corpo e a comida (KRÖLLER, JAHNKE & WARSCHBURGER, 2013; RODGERS et al., 2013; BARROSO et al., 2012; HART et al., 2010).

Como mencionado anteriormente, a influência materna é exercida sobre o comportamento alimentar desde o período gestacional, pois a alimentação que a mãe escolhe para si irá impactar na aceitação alimentar da criança. O líquido amniótico, bem como o leite materno, exercem influência sobre a aceitação alimentar futura da criança, quando do tempo oportuno introdução da alimentação complementar (COOKE & FIELDS, 2011; BEAUCHAMP & MENNELLA, 2009; MENNELLA, JAGNOW & BEAUCHAMP, 2001). Tem-se discutido há muito tempo o quanto os comportamentos da mãe referentes à sua dieta pré e pós-gestacional e mesmo a prática do aleitamento materno também são comportamentos que sofrem influências diversas, intrínsecas e extrínsecas à mulher (MURIMI et al., 2010; ALEXANDER et al., 2010; O'BRIEN et al., 2009; TAKUSHI et al., 2008; KOOLS et al., 2006), somando-se às responsabilidades já creditadas à mãe. Desta forma, a mulher deve receber apoio tanto dos profissionais de saúde quanto do seu círculo social, tamanho o impacto das suas práticas sobre os desfechos em saúde para a criança, já apontados anteriormente.

No que tange à introdução da alimentação complementar, a influência materna é verificada no momento da introdução dos alimentos, de forma precoce ou oportuna, nos tipos de alimentos oferecidos, na consistência e no ambiente alimentar proporcionado. Estes aspectos influenciam a sua aceitação e a sua preferência ao longo da infância (MENNELLA et al., 2009; FORESTELL & MENNELLA, 2007; MENELLA & BEAUCHAMP, 2005; SKINNER et al., 2002; BIRCH, 1998). Posteriormente, as práticas relacionadas às experiências alimentares da criança também costumam ser proporcionadas pela mãe como principal cuidadora dos filhos (RAMOS & ALMEIDA, 2003).

Assim como o aleitamento materno, o desmame e a introdução da alimentação completar são práticas imbuídas de muitos significados. Estudos demonstram que muitas mães desmamam precocemente e introduzem outros

tipos de alimentos antes do tempo oportuno por motivos como maior conveniência, por achar que é o mais adequado para a criança, por acreditar que a criança precisa ou prefere desta forma ou mesmo por achar que seu leite é insuficiente ou fraco, entre outros (GROSS et al., 2010; RASHEED et al., 2009; ALDER et al., 2004). O desmame e a introdução alimentar precoce podem acarretar em desfechos negativos para a saúde da criança, principalmente pela diminuição do tempo e quantidade de leite materno oferecido e porque, antes dos 6 meses de idade, a criança não está preparada fisiologicamente para receber outros alimentos que não o leite materno (BRASIL, 2010a; BRASIL, 2010b).

Porém, a influência materna no comportamento alimentar dos filhos vai muito além do tipo de alimento oferecido à criança. A própria relação que a mãe estabelece com a comida e a forma como a oferece, ou seja, o ambiente alimentar que proporciona aos seus filhos (CARNELL et al., 2011; KRAL & RAUTH, 2010; HENDY et al., 2009; SCAGLIONE, SALVIONI & GALIMBERTI, 2008), também repercute na formação do comportamento alimentar infantil. Estudo que analisou a influência dos comportamentos maternos sobre as práticas alimentares de seus filhos identificou que estes são transmitidos e passam a ser reproduzidos pelas crianças desde idades precoces, como, por exemplo, a alimentação por razões emocionais e a restrição e determinados alimentos. Apontou também para o fato de que as práticas maternas, como a pressão para comer, podem resultar inclusive em mudanças negativas no estado nutricional da criança, fazendo com que a mesma sinta ainda menos prazer pelo consumo alimentar agravando o ganho de peso almejado pela mãe (KRÖLLER, JAHNKE & WARSCHBURGER, 2013). Outro trabalho que analisou as práticas parentais relacionadas à alimentação dos filhos, coletando dados de quase 5000 crianças na faixa dos 4 anos de idade, identificou que práticas como o monitoramento, a restrição e a pressão para comer estavam envolvidos com comportamentos negativos por parte da crianças, como alimentação por razões emocionais, menor prazer ao comer e diminuição do apetite por causas emocionais (JANSEN et al., 2012).

Diante do exposto, torna-se relevante compreender melhor as percepções e atitudes maternas relacionadas com as práticas alimentares adotadas para seus filhos nos primeiros anos de vida, principalmente devido

aos impactos destas práticas nos desfechos comportamentais e de saúde da criança.

1.3 Referências

AGUIAR, C.R.R.A.; AGUIAR, M.J.L.; GUEDES, R.C.A. Bases Neurofisiológicas e Neuroquímicas do Comportamento Alimentar. In: Psicobiologia do Comportamento Alimentar. Rio de Janeiro: Rubio, 2013.

ALDER, E. M. et al. What influences the timing of the introduction of solid food to infants? **The Britsh Journal of Nutrition**, England, v. 92, n. 3, p. 527-31, 2004. ISSN 0007-1145.

ALEXANDER, A.; DOWLING, D.; FURMAN, L. What do pregnant low-income women say about breastfeeding? **Breastfeeding Medicine**, v. 5, n. 1, p. 17-23, Feb 2010. ISSN 1556-8342.

BAIRD, J. et al. Milk feeding and dietary patterns predict weight and fat gains in infancy. In: (Ed.). **Paediatric Perinatal Epidemiology**. England, v.22, 2008. p.575-86. ISBN 1365-3016.

BARROSO, C.S. et al. The association between early childhood overweight and maternal factors. **Childhood Obesity**, 2012, v. 8, n. 5, p. 449-54, doi: 10.1089/chi.2011.0094.

BEAUCHAMP, G.K.; MENNELLA, J.A. Early flavor learning and its impact on later feeding behavior. **Journal of Pediatric Gastroenteroly and Nutrition**. 2009 Mar;48 Suppl 1:S25-30. doi: 10.1097/MPG.0b013e31819774a5.

BLISSETT, J.; FOGEL, A. Intrinsic and extrinsic influences on children's acceptance of newfoods. **Physioly Behavior**, 2013, v.10, n. 121, p. 89-95

BIRCH, L. Development of food acceptance patterns in the first years of life. **Proceedings of the Nutrition Society**, 1998, v. 57, n. 4, p. 617-24.

BRASIL (a). Dez passos para uma alimentação saudável: Guia alimentar para

crianças menores de dois anos. Ministério da Saúde. Secretaria de Atenção à Saúde. Departamento de Atenção à Saúde. 2ª Edição, Série A. Normas e Manuais Técnicos, Brasília: DF, 2010.

BRASIL (b). Estratégia Nacional para a Alimentação Complementar Saudável – Caderno do Tutor. Ministério da Saúde. Rede Internacional em Defesa do Direito de Amamentar - IBFAN Brasil. Série F. Comunicação e Educação em Saúde, Brasília: DF, 2010.

BRASIL. Rede Amamenta Brasil. Os Primeiros Passos (2007-2010). Ministério da Saúde. Secretaria de Atenção à Saúde. Área Técnica de Saúde da Criança e Aleitamento Materno. Série I. História da Saúde, Brasília: DF, 2011.

BRASIL. Guia Alimentar para a População Brasileira. Ministério da Saúde. Secretaria de Atenção à Saúde. Departamento de Atenção à Saúde. 2ª Edição, Brasília: DF, 2014.

CANELLA, D.S. et al. Ultra-processed food products and obesity in Brazilian households (2008-2009). **PLoS One**. 2014 Mar 25;9(3):e92752. doi: 10.1371/journal.pone.0092752.

CARNELL, S. et al. Parental feeding behaviours and motivations. A qualitative study in mothers of UK pre-schoolers. **Appetite**. 2011 Dec;57(3):665-73. doi: 10.1016/j.appet.2011.08.009.

CARVALHO C.A. et al. Food consumption and nutritional adequacy in Brazilian children: a systematic review. **Revista Paulista de Pediatria**. 2015 Apr-Jun;33(2):211-21. doi: 10.1016/j.rpped.2015.03.002.

CHAVES, R. G. Porque amamentar exclusivamente até 6 meses e manter a amamentação até 2 anos ou mais? In: Manual de Aleitamento Materno. [coordenador: Luciano Borges Santiago], Barueri, SP: Manole, 2013.

CONDE, W.L.; MONTEIRO, C.A. Nutrition transition and double burden of undernutrition and excess of weight in Brazil. **The American Journal of Clinical Nutriton**. 2014 Dec;100(6):1617S-22S. doi: 10.3945/ajcn.114.084764.

COOKE, L.; FILDES, A. The impact of flavour exposure in utero and during milk feeding on food acceptance at weaning and beyond. **Appetite**. 2011 Dec;57(3):808-11. doi: 10.1016/j.appet.2011.05.317

COSTA LOUZADA, M.L. et al. Ultra-processed foods and the nutritional dietary profile in Brazil. **Revista de Saúde Pública**. 2015;49:38. doi: 10.1590/S0034-8910.2015049006132.

COULTHARD, H; et al. Long-term consequences of early fruit and vegetable feeding practices in the United Kingdom. **Public Health Nutrition**, England, v. 13, n. 12, p. 2044-51, 2010.

COULTHARD, H.; HARRIS, G.; EMMETT, P. Delayed introduction of lumpy foods to children during the complementary feeding period affects child's food acceptance and feeding at 7 years of age. **Maternal and Child Nutrition**, England, v. 5, n. 1, p. 75-85, 2009.

FELDENS, C. A. et al. Long-term effectiveness of a nutritional program in reducing early childhood caries: a randomized trial. **Community Dentistry and Oral Epidemiology**, Denmark, v. 38, n. 4, p. 324-32, 2010 (a).

FELDENS, C.A. et al. Early feeding practices and severe early childhood caries in four-year-old children from southern Brazil: a birth cohort study. **Caries Research**, Switzerland, v. 44, n. 5, p. 445-52, 2010 (b).

FORESTELL, C.A.; MENELLA, J.A. Early determinantes of fruit and vegetables acceptance. **Pediatrics**, 2007, v.120, n.6, p.1247-54.

GRIFFITHS, L. J. et al. Effects of infant feeding practice on weight gain from birth to 3 years. **Archives of Disease in Childhood**, England, v. 94, n. 8, p. 577-82, 2009. ISSN 1468-2044.

GROSS, R. S. et al. Maternal perceptions of infant hunger, satiety, and pressuring feeding styles in an urban Latina WIC population. **Academic Pediatric**. 2010 Jan-Feb;10(1):29-35. doi: 10.1016/j.acap.2009.08.001..

HANSEN, K. Breastfeeding: a smart investment in people and in economies.

Lancet, 2016, vol. 30;387(10017):416. doi: 10.1016/S0140-6736(16)00012-X.

HART, C.N. et al. The association of maternal food intake and infants' and toddlers' food intake. **Child: Care, Health and Development**, 2010, v. 36, n. 3, p. 396-403, doi: 10.1111/j.1365-2214.2010.01072.x.

HENDY, H.M. et al. The Parent Mealtime Action Scale (PMAS). Development and association with children's diet and weight. **Appetite**. 2009 Apr;52(2):328-39. doi: 10.1016/j.appet.2008.11.003.

HORTA, B.L.; LORET de MOLA, C. & VICTORA, C.G. Long-term consequences of breastfeeding on cholesterol, obesity, systolic blood pressure and type 2 diabetes: a systematic review and meta-analysis. **Acta Paediatrica**, 2015 Dec;104(467):30-7. doi: 10.1111/apa.13133.

IBGE. Instituto Brasileiro de Geografia e Estatística. Pesquisa de Orçamentos Familiares 2008-2009: análise do consumo alimentar pessoal no Brasil. Rio de Janeiro: IBGE; 2010.

JANSEN, P.W. et al. Children's eating behavior, feeding practices of parents and weight problems in early childhood: results from the population-based Generation R Study. **The International Journal of Behavioral Nutrition and Physical Activity**. 2012 Oct 30;9:130. doi: 10.1186/1479-5868-9-130.

KOOLS, E. J. et al. The motivational determinants of breast-feeding: predictors for the continuation of breast-feeding. **Preventive Medicine**, United States, v. 43, n. 5, p. 394-401, 2006. ISSN 0091-7435.

KRAL, T.V.E.; RAUTH, E.M. Eating behaviors of children in the contexto of their Family environment. **Physiology & Behavior**, 100, 2010: 567-573.

KRÖLLER, K.; JAHNKE, D. & WARSCHBURGER, P. Are maternal weight, eating and feeding practices associated with emotional eating in childhood? **Appetite**, 2013, v. 65, p. 25–30, doi: 10.1016/j.appet.2012.11.032.

LOUZADA, M.L. et al. Long-term effectiveness of maternal dietary counseling in a low-income population: a randomized field trial. **Pediatrics**. 2012

Jun;129(6):e1477-84. doi: 10.1542/peds.2011-3063.

MAJAMANDA, J. et al. The Effectiveness of Community-Based Nutrition Education on the Nutrition Status of Under-five Children in Developing Countries. A Systematic Review. **Malawi Medical Journal**. 2014 Dec;26(4):115-8.

MATIJASEVICH, A. et al. Trends in socioeconomic inequalities in anthropometric status in a population undergoing the nutritional transition: data from 1982, 1993 and 2004 Pelotas birth cohort studies. **BMC Public Health**. 2012 Jul 9;12:511. doi: 10.1186/1471-2458-12-511.

MENNELLA, J.A.; REITER, A.R.; DANIELS, L.M. Vegetable and Fruit Acceptance during Infancy: Impact of Ontogeny, Genetics, and Early Experiences. **Advances in Nutrition**. 2016 Jan 15;7(1):211S-9S. doi: 10.3945/an.115.008649.

MENELLA, J.A.; BEAUCHAMP, G.K. Understanding the origin of flavor preferences. **Chemical Senses**, 2005, v.30, n.1, p.i242-i243.

MENNELLA, J.A.; JAGNOW, C.P.; BEAUCHAMP, G.K. Prenatal and postnatal flavor learning by human infants. **Pediatrics**. 2001 Jun;107(6):E88.

MENNELLA, J.A.; TRABULSI, J.C. Complementary foods and flavor experiences: setting the foundation. **Annals of Nutrition & Metabolism**, 2012; 60 Suppl 2:40-50. doi: 10.1159/000335337.

MICHAELSEN, K. F. et al. Science base of complementary feeding practice in infancy. **Current Opinion in Clinical Nutrition and Metabolic Care,** v. 13, n. 3, p. 277-83, May 2010. ISSN 1535-3885.

MOURA, S.M.S.R.; ARAÚJO, M.F. A Maternidade na História e a História dos Cuidados Maternos. **Psicologia Ciência e Profissão**, 2004, vol.24 (1), p.44-55.

MURIMI, M. et al. Factors that influence breastfeeding decisions among special supplemental nutrition program for women, infants, and children participants

from Central Louisiana. **Journal of The American Dietetic Association**, United States, v. 110, n. 4, p. 624-7, 2010. ISSN 1878-3570.

NICKLAUS, S., The role of food experiences during early childhood in food pleasure learning, **Appetite**, 2015, http://dx.doi.org/10.1016/j.appet.2015.08.022.

O'BRIEN, M. et al. Exploring the influence of psychological factors on breastfeeding duration, phase 1: perceptions of mothers and clinicians. **Journal of Human Lactation**, United States, v. 25, n. 1, p. 55-63, 2009. ISSN 0890-3344.

RAMOS, C.V.; ALMEIDA, J.A.G. Maternal allegations for weaning: qualitative study. **Jornal de Pediatria**, 2003, vol.79(5), p.385-90.

RASHEED, S. et al. Maternal, infant, and household factors are associated with breast-feeding trajectories during infants' first 6 months of life in Matlab, Bangladesh. **The Journal of Nutrition**, United States, v. 139, n. 8, p. 1582-7, 2009. ISSN 1541-6100.

RAUBER, F.; HOFFMAN, D.J.; VITOLO, M.R. Diet quality from pre-school to school age in Brazilian children: a 4-year follow-up in a randomised control study. **The British Journal of Nutrition**. 2014 Feb;111(3):499-505. doi: 10.1017/S0007114513002857.

ROBINSON, S. M. et al. Variations in infant feeding practice are associated with body composition in childhood: a prospective cohort study. **The Journal of Clinic Endocrinology and Metabolism**, United States**,** v. 94, n. 8, p. 2799-805, 2009. ISSN 1945-7197.

RODGERS, R. F. et al. Do maternal body dissatisfaction and dietary restraint predict weight gain in young pre-school children? A 1-year follow-up study. **Appetite**, 2013, v. 67, p. 30-6, doi: 10.1016/j.appet.2013.03.009.

ROLLINS, N.C.; et al. Why invest, and what it will take to improve breastfeeding practices? **Lancet**. 2016 Jan 30;387(10017):491-504. doi: 10.1016/S0140-6736(15)01044-2.

SCAGLIONI, S.; SALVIONI, M.; GALIMBERTI, C. Influence of parental atitudes in the development of children eating behavior. **British Journal of Nutrition** (2008), 99, Suppl. 1, S22-S25.

SCHWARTZ, C; et al. Development of healthy eating habits early in life. Review of recente evidence and selected guidelines. **Appetite**, Volume 57, 2011, 796-807.

SCHWARTZ, C. et al. Developmental changes in the acceptance of the five basic tastes in the first year of life. **British Journal of Nutrition**, v.102, n.9, p.1375-85, nov. 2009.

SKINNER, J; et al. Children's food preferences: a longitudinal analysis. **Journal of the American Dietetic Association**, 2002, v.102, n.11, p. 1638-1647.

SPARRENBERGER, K. et al. Ultra-processed food consumption in children from a Basic Health Unit. **Jornal de Pediatria** (Rio J). 2015 Nov-Dec;91(6):535-42. doi: 10.1016/j.jped.2015.01.007.

STRASSBURGER, S. Z. et al. Nutritional errors in the first months of life and their association with asthma and atopy in preschool children. **Jornal de Pediatria** (Rio J), v. 86, n. 5, p. 391-9, Sep-Oct 2010.

TAKUSHI, S. et al. Motivating breastfeeding among expectant mothers. **Revista de Nutrição**, Campinas, v. 21, 2008. .

WORLD HEALTH ORGANIZATION. Report of the expert consltation on the optimal duration of exclusive breastfeeding. World Health Organization, Geneva, Switzerland, 2001.

VALMÓRBIDA, J.L.; VITOLO, M.R. Factors associated with low consumption of fruits and vegetables by preschoolers of low socio-economic level. **Jornal de Pediatria** (Rio J). 2014 Sep-Oct;90(5):464-71. doi: 10.1016/j.jped.2014.02.002.

VENÂNCIO S.I. et al. Breastfeeding practice in the Brazilian capital cities and the Federal District: current status and advances. **Jornal de Pediatria** (Rio J). 2010 Jul-Aug;86(4):317-24.doi:10.2223/JPED.2016.

VENTURA, A.K.; BIRCH, L.L. Does parenting affect children's eating and weight status? **The International Journal of Behavioral Nutrition and Physical Activity**. 2008 Mar 17;5:15. doi: 10.1186/1479-5868-5-15.

VENTURA, A.K.; WOROBEY, J. Early Influences on the development of food preferences. **Current Biology**, Vol 23, N9, 2013.

VICTORA, C.G. et al. Breastfeeding in the 21st century: epidemiology, mechanisms, and lifelong effect. **Lancet**, 2016, vol. 30;387(10017):475-90. doi: 10.1016/S0140-6736(15)01024-7.

VITOLO, M.R. et al. Maternal dietary counseling reduces consumption of energy-dense foods among infants: a randomized controlled trial. **Journal of Nutrition Education and Behavior**. 2012 Mar-Apr;44(2):140-7. doi: 10.1016/j.jneb.2011.06.012.

VITOLO, M. R. et al. Effectiveness of a nutrition program in reducing symptoms of respiratory morbidity in children: a randomized field trial. **Preventive Medicine**, United States, v. 47, n. 4, p. 384-8, 2008. ISSN 1096-0260.

2. Objetivos

2.1. Objetivo Geral:

Investigar as percepções e atitudes maternas referentes à alimentação saudável e sobre as práticas alimentares adotadas para si próprias e para seus filhos em idade pré-escolar

2.2. Objetivos Específicos:

- Analsar as percepções maternas referentes à própria alimentação e à alimentação de seu filho em idade pré-escolar;
- Verificar a associação entre percepções maternas sobre alimentação saudável e as características maternas e familiares;
- Identificar as estratégias adotadas pelas mães com relação à alimentação de seus filhos em idade pré-escolar;
- Associar as estratégias adotadas pelas mães em relação à alimentação de seus filhos com as características maternas e familiares.

3. ARTIGO 1

Mothers' Perceptions of Their Own Diets and the Diets of Their Children at 2-3 Years of Age

Broilo, M.C.; Vitolo, M.R.; Stenzel, L.M.; Levandowski, D.C.

Mônica Cristina Broilo, Doutoranda em Ciências da Saúde pela UFCSPA

Universidade Federal de Ciências da Saúde de Porto Alegre (UFCSPA)

Artigo Submetido em Abril de 2016 ao Periódico *Psicologia: Teoria e Pesquisa*

Mothers' Perceptions of Their Own Diets and the Diets of Their Children at 2-3 Years of Age

Abstract

Cross-sectional analysis of a follow-up study to examine the perceptions of mothers treated at public health centers, regarding their own diets and the diets of their children aged 2-3. Among the 464 participants, 57% reported perceiving their own diets as unhealthy while 72% perceiving their children's diets as unhealthy. The mothers' perceptions of their own diets were associated with less maternal schooling and having received health care from professionals who had received special training. The mothers' perceptions of their children's diets were associated with more maternal schooling. It was possible to understand the differences between the mothers' perceptions of their own diets and those of their children, reinforcing the importance of considering maternal beliefs and attitudes in nutrition intervention programs.

Introduction

Diet plays an important role in the health of individuals from childhood to adulthood, as it influences factors such as growth, development and metabolic programming. It also has an impact on the development of certain diseases in childhood and even in adulthood (Michaelsen *et al*, 2010). Thus, it becomes relevant to study children's dietary practices starting from birth, since studies have shown that these habits are formed in the first years of life and change little over time (Skinner *et al*, 2002).

Although children have innate preferences for certain tastes (Birch, 1998; Schwartz *et al*, 2009), repeated exposure to foods can stimulate their acceptance, which can determine their eating habits (Forestell & Mennella, 2007; Mennella & Beauchamp, 2005). In addition, other behavioral factors may influence children's food intake, especially parental models, the family food environment, feeding practices adopted in relation to breastfeeding and weaning age. In later years, factors such as restricting certain foods, pressure to eat and adopting strategies to encourage and reward are also seen as having an important influence on children's eating habits (Blisset & Fogel, 2013).

Family members serve as an important reference for the foods that are offered to children. In fact, although children can decide whether to accept a certain food and how much to eat, it is generally the caretakers who determine which foods are offered to them (Mennella & Trabulsi, 2012). Parents can have both a positive and a negative influence on their children's eating habits and dietary quality (Adamo & Brett, 2014).

In particular, studies have highlighted the important influence mothers have on their children's diets in relation to various factors, such as food intake, as mothers' diets are similar to those of their children in terms of the types of food consumed (Hart *et al*, 2010). Parental influence has also been identified on children's eating behaviors, as the attitudes of mothers regarding their own diets as well as those of their children can determine their children's behavior in relation to food (Kröller, Jahnke & Warschburger, 2013). Mothers' nutritional status has also been associated with that of their children (Barroso *et al*, 2012). Similarly, mothers' satisfaction with their bodies is reflected in their children's satisfaction with their own bodies (Rodgers *et al*, 2013).

Given the importance of parental behaviors (especially those of mothers) on children's eating habits, it is important to understand this phenomenon not only by investigating family dietary practices, which have been studied extensively in recent years (Blisset & Fogel, 2013; Hart *et al*, 2010; Kröller, Jahnke & Warschburger, 2013), but also by focusing on parental perceptions and beliefs that support and influence these behaviors and choices. In psychology, perception is more than just the reception of a stimulus. It is also comprised of the attribution of meaning to such stimuli, and its importance lies mainly in the fact that people's behavior is based on their interpretation of reality and not necessarily of reality itself (Michner, Delamater & Myers, 2005).

It is known that perception influences decision making in different areas such as health behaviors, including behaviors related to eating (Wang, Woesley & Cunningham, 2008; Giles *et al*, 2004; Stafleu *et al*, 1995). The present study aimed to analyze mothers' perceptions about their own diets and those of their children (aged 2-3) considering the criterion of being healthy or not, as well as to investigate potential associations between these perceptions and maternal/family characteristics.

This study's importance lies in the fact that it doesn't study what mothers do in relation to their own diets and those of their children (which has been a frequent subject of mother-child nutrition studies) but rather what mothers say and think about this topic (i.e. how they perceive their own behavior in this regard). The literature shows that behavioral changes occur when an individual believes that her behavior is inappropriate and perceives that maintaining such behavior may lead to health risks (Straub, 2014). This has been observed in relation to several health conditions (Wisting *et al*, 2016; Luder *et al*, 2015;

Sausbury *et al*, 2014). However, studies that focus on the perception of health behaviors in non-clinical contexts (as this study does) are still rare. Nevertheless, studying how mothers perceive their own diets and those of their children can help to understand the quality of children's diets and their resulting health outcomes. Thus, studying this topic can improve the effectiveness of nutritional interventions, which is of prime importance in early childhood.

Method

Design

It is a cross-sectional analysis of data collected in a follow-up study (Vitolo, Louzada & Rauber, 2014). This major study aimed to assess the impact of an educational intervention conducted with public health center (PHC) professionals on health outcomes of children whose mothers were treated by these professionals during pregnancy.

Participants

We interviewed 474 women for the present study. Of these, 10 were excluded because the questionnaire was not answered by the mother directly, but rather by another caretaker responsible for the child (usually the maternal grandmother). Thus, the sample was comprised of 464 mothers. Of these mothers, 82.3% (n=382) were aged 20 years or older when their babies were born, 65.5% (n=304) did not have formal employment, 53.4% (n=248) had eight years of schooling or more, 77.2% (n=435) lived with a husband or partner, 53.5% (n=244) had a total family income higher than two minimum wages, and 56.5% (n=262) already had other children.

Among the maternal and family characteristics, the only one that differs significantly ($p<0.05$) - comparing the present study's sample size (fourth data

collection stage) with the larger study's initial sample (n=715 mother-baby dyads) - is maternal age, due to the fact that there was a greater prevalence of follow-up loss among participating mothers under age 20. The other characteristics were significantly similar, demonstrating that the present study's sample was still highly representative.

Procedures and Instruments

For the present study, we considered the data collected in the major project's fourth collection stage (with mothers of children aged 2-3) regarding the mothers' perceptions of their own diets and those of their children. More specifically, the following questions were used to analyze maternal perceptions: 1) *"Do you believe that your diet is healthy? If so, why? If not, why not?"* 2) *"Do you believe that your child's diet is healthy? If so, why? If not, why not?".* The data were collected using a questionnaire that was specifically designed for the major study (Vitolo, Louzada & Rauber, 2014). The mothers' answers regarding these questions were registered verbatim by the data collection staff. Family socio-economic and demographic data collected during pregnancy (a period corresponding to the main study's first data collection phase) were also considered.

The participants were selected during pregnancy at 20 PHCs in Porto Alegre, Rio Grande do Sul, Brazil, in order to cover both the territorial organization established by the city and the sample size that had previously been planned for the main project. These women were allocated in two groups: 1) the intervention group, which was comprised of pregnant women treated by professionals who received a one-hour training at their workplaces (PHC) on the "Ten steps for healthy feeding for Brazilian children from birth to 2 years of

age" government program (Brazil, 2002); and 2) the control group, which was comprised of pregnant women who were treated by professionals who did not receive this training at PHC. This government program is a joint initiative of Brazilian Health Ministry and Health Promotion and Protection Program of the Pan-American Health Organization (PAHO-WHO), which aims to enable health professionals to promote healthy feeding practices for children under age two. It is important to point out that these pregnant women did not receive any type of direct intervention by the research team. Their participation in the larger study was meant to identify potential health outcomes for their children related to the assistance received during pregnancy by PHC professionals who have been trained or not.

The data collection was done by a previously-trained team composed of undergraduate and post-graduate students in nutrition and psychology. They identified women at the PHC who were in their third trimester of pregnancy. Among the present study's final sample, 51.9% (n=241) of the women were originally treated by health professionals who received the training.

In the first contact, the women were informed of the study's procedures and objectives and were invited to participate, signing informed consent forms. They also responded to a questionnaire in which they provided socio-economic, demographic and family data. Information was also collected on expected birth date, address and telephone number for subsequent home visits. HIV-positive women were excluded from the study. In the following data collection phases (when the children were aged 6-9 months, 12-16 months, and 2-3 years), the mothers were re-contacted and invited to participate again. The data collection for these three phases was conducted at the participants' places of residence.

Data Analysis

All data collected were entered into a database and subjected to double entry in the Statistical Package for Social Science (SPSS) v.19.0 software program. The data were validated with the Epi Info v.6.4 program. The closed questions *"Do you believe that your diet is healthy?"* and *"Do you believe that your child's diet is healthy?"* were quantified and presented in absolute frequencies. Answers to the open questions *"If so, why?* and *"If not, why not?"* were classified using content analysis (Bardin, 2004). The responses were first transcribed verbatim. A pre-analysis was done with an initial reading of the participants' answers and the formulation of preliminary categories according to their content. In the next stage, the material was explored and the responses were read again and classified into the initially-created categories. During this process, the categories were reviewed by three judges to assess their suitability and mutual thematic exclusion. Whenever the categorical structure was found to be satisfactory, a judge would again assign the responses to their respective categories. Questions about this new classification were settled by discussion and consensus with the other two judges. Finally, the response categories were quantified for presentation in relative frequencies.

Any associations between personal/family characteristics and the mothers' perceptions of their own diets and those of their children were verified using univariate Poisson regression with robust estimation. Variables with $p \leq 0.20$ were analyzed using multivariate Poisson regression with robust estimation to independently verify their association with the mother's perceptions. The significance level was considered to be 5%.

Ethical Considerations

This major study was approved by the Research Ethics Committee (protocol no. 748-11 and 921-12). The participants signed informed consent forms in which they were informed of the study's objectives and procedures and had their questions answered. The participants' names were kept confidential. In addition, participation in the study could be interrupted without obligation by the participants and/or compromising the care they received at the PHC.

Results

When evaluating their own diets (Table 1), 57% of the mothers reported that they did not consider them to be healthy. Factors related to a lack of diet quality were the most cited to account for this perception. A lack of regularity or routine, insufficient or excessive food intake, perceived health outcomes and limited food variety were cited in different proportions to justify this perception, as shown in Table 1.

On the other hand, 43% of the mothers considered their diets to be healthy. Among the reasons for this perception, those related to the quality of food consumed were the most cited by the respondents. In addition, these mothers believed that factors such as the variety of foods consumed, the regularity or routine of consumption, perceived health outcomes and the amount of food consumed also determined their perceptions of their own diets as being healthy (Table 1).

When the mothers talked about their perceptions of their children's diets, 72% considered them to be healthy and, as with their own diets, factors related to the quality of the foods consumed were most cited by the participants to determine this perception. The mothers cited variety, regularity/routine, school meals, perceived health outcomes and amount of food consumed (Table 2).

Among the respondents who did not consider their children's diets to be healthy (28%), a lack/deficiency of diet quality was most frequently reported as well, while amount of food, regularity/routine, variety of foods consumed and perceived health outcomes were cited less frequently (Table 2).

Personal and family characteristics were subsequently associated with the mothers' perceptions about their own diets (Table 3). The perception of having a healthy diet was significantly associated with originally belonging to the group that was treated by trained professionals during pregnancy and having less than eight years of schooling ($p<0.05$). The mothers' perception that their children's diets were healthy was only associated with having eight or more years of schooling ($p<0.05$), as shown in Table 4.

Discussion

This study aimed to analyze mothers' perceptions of their own diets and those of their children aged 2-3 years, and also to investigate possible associations between these perceptions and maternal/family characteristics. The results indicate differences between mothers' perceptions of their own diets and those of their children as being healthy or not, although the reasons cited by the participants to explain such perceptions were quite similar, especially in reference to diet quality (i.e. the types of foods consumed).

Perception of own diet

Regarding the mothers' perceptions of their own diets, 57% of the participants did not consider their diets to be healthy. A study conducted with a representative Brazilian sample found similar results (IBGE, 2010). According to this national survey, fruit, vegetable and fiber intakes are generally insufficient and various vitamin and mineral intakes are below recommended levels. In

addition, it detected a high consumption of saturated fat, sodium, sugar and sugary drinks, indicating that the diets of adult women are not compatible with healthy eating (IBGE, 2010).

In addition to the interviewees' perceptions about whether or not their diets were healthy, the present study also investigated the reasons for these perceptions. The women were encouraged to express themselves freely about this topic during the data collection. However, they identified the parameters they used to classify dietary adequacy in their answers, such as quality (types of foods), quantity, variety and regularity, among others (Kennedy *et al*, 1995). One reason for the participants' proper identification of aspects related to healthy eating may be the fact that this information has been widely reported and thus has become common sense for most people. Therefore, the interviewees demonstrated a minimally correct knowledge of the parameters employed to evaluate diet quality.

However, although the concept of healthy eating has been widely debated, it may not always be clearly identified by the public due to its complexity. Thus, even though mothers may know that factors such as quality, quantity and variety are important to a healthy diet, they are not always be able to identify the types of food that are healthy, the quantities recommended for themselves or their children and how varied a diet should be to be effectively considered healthy. To investigate this, a qualitative study was conducted with the mothers of school children who had a socio-economic level similar to those of the present study. The study identified that, although the mothers recognized the importance of healthy lifestyle habits and a healthy diet for their own health and that of their children, they had considerable difficulty in identifying what was

contemplated within this concept, regardless of their educational level (Oli *et al*, 2015). Furthermore, they had some appropriate concepts, such as considering ultra-processed foods to be incompatible with a healthy diet, as well as others that were inappropriate or contradictory, such as considering a healthy diet to be bland or appropriate only for sick people (Oli *et al*, 2015).

One fact that confirms the difficulty the intervewed mothers had in understanding the concept of healthy eathing and its application to their own diets is that, although 43% mentioned having a healthy diet, it was possible to identify perceptions not fully consistent with healthy eating patterns based on some of the mothers' statements (Table 1).

It is known that many factors influence people's food choices, thus demonstrating the great complexity of this issue. Examples of these factors include aspects related to food itself, such as its nutritional characteristics, price, flavor, variety and availability as well as factors related to the individual such as biological, socio-cultural, anthropological, economic and psychological determinants (Jomori, Proença & Calvo, 2008). Therefore, when relating this scenario with the present study's data, one might think that the mothers interviewed actually considered health-related issues when they chose foods and consequently reported that they believed their diets to be healthy. However, even though they judged the foods they chose to be suitable for a healthy diet, many other factors (including those mentioned above) act simultaneously, determining the mothers' food choices, possilbly without them having considered this issue. Thus, some patterns that are not fully consistent with a healthy diet can be identified in these women's daily practices.

Upon analyzing the interviewees' responses, it was possible to note that diet quality (in terms of the types of food consumed) was the most representative factor in evaluating their own diets as being healthy or not. The same mothers attributed their compromised dietary quality to the consumption of foods of low nutritional value. In addition, the interviewees highlighted the importance of the types of food eaten. Fruits, vegetables, rice, beans and meat were considered to be beneficial and responsible for a healthy diet, as opposed to fried foods, snacks, sweets, treats or even a lack of the previously cited "healthy" foods. The great value attributed to natural food over processed and ultra-processed ones is in agreement with proposals from the Food Guide for the Brazilian Population, which incorporates values from the country's traditional food culture, highlighting the importance of a diet based on fresh natural food (Brazil, 2014).

Therefore, the interviewees' perceptions about what types of food are healthy proved to be appropriate, according to scientifically recognized dietary patterns (Brazil, 2014). However, as there are multiple aspects involved in eating behavior, perhaps the interviewees cannot classify their diet quality in a fully accurate manner, possibly due to a lack of information or even critical thinking about the subject, or because of other social and cultural aspects that are intertwined in these choices, but were not investigated here. These aspects may have contributed to the fact that the mothers were not able to effectively implement a healthy diet.

From this perspective, the discrepancy found between the mothers' assessment of their diets and some of the statements they made can also lead one to assume that they responded to the questions based on what they

believed to be socially expected and therefore socially desirable behavior. Health Psychology Theories (Fishbein & Ajzen, 1975; Ajzen & Madden, 1986) points out that part of the attitude related to behavior is based on a subjective norm which consists of the interpretation an individual makes about being approved of or not by another person in regard to a certain behavior. Perhaps the mothers thought that the interviewers would appreciate more responses that indicated healthy diets for themselves and especially for their children, who were the study's primary focus.

With respect to the association analyses, the mothers' perceptions of their own diets being healthy were significantly more prevalent among the participants who originally belonged to the group that received care from trained professionals during pregnancy. A previous study, which was conducted with the same sample when their children were aged 6-9 months, found that the mothers who reported following the health professionals' guidelines adopted much healthier feeding practices for their children (Broilo *et al*, 2013). This data may be related to the association found in the present study, in that the women who were counseled by trained professionals and who were consequently much better prepared probably adopted healthier feeding practices for their children and possibly for themselves. This finding indicates not only that parents influence their children's eating habits, but also that children can influence the food choices that mothers make for themselves (Guidetti & Cavazza, 2008). This finding is consistent with the previously cited social desirability hypothesis, as these mothers may have more strongly perceived the professionals' emphasis on taking care of one's diet.

Formal education was another maternal characteristic significantly associated with the perception the mothers had of their own diets being healthy. Women with less than eight years of schooling reported having this perception more frequently, raising some reflections. Perhaps less schooling is related to the perception of a healthy diet because these mothers are less informed and less critical about the criteria that would define a diet as healthy. In fact, there are many factors that can influence an individual's food choices for herself and for her family (Adamo & Brett, 2014) and a higher level of education can ensure a better diet, but not necessarily a positive perception of it. On the contrary, it leads to being more critical of one's eating habits.

Perception of child's diet

When asked about their perceptions of their children's diets, 72% of the participants considered them to be healthy. A similar result was found in a study that compared mothers' perceptions of their children's diets with the children's actual diet quality. Although only 0.2% of the children had diets considered good, 78% of the mothers reported believing that their children's diets were adequate (Kourlaba *et al*, 2009). Although the present study didn't assess the food actually consumed by the children (since it focused on mothers' perceptions), national review studies using similar samples, and other studies that considered data from the sample's main project from which the present study is derived, indicate that children's diets fall well short of recommendations and do so at increasingly younger ages. Thus, it is noted that mothers' perceptions of the healthy feeding of their children may not be consistent with the food their children actually receive, as is indicated in the literature (Kourlaba *et al*, 2009).

This finding bears highlighting because, in order to change a behavior, it is necessary for an individual to recognize that a diet is not adequate and/or perceive the health risks of maintaining such a diet (Straub, 2014). This fact was demonstrated in a review study that highlighted a mother's perception of her child as being obese as a necessary requirement for her to seek professional help and to follow nutritional guidelines (Camargo *et al*, 2013). Applying this finding to the present results (in which 72% of the mothers believed their children's diets to be healthy) confirms the low probability of changing dietary behaviors or even seeking professional assistance to discuss child feeding issues. In this regard, the present study's findings enable a partial understanding of the reasons for rising levels of child nutrition inadequacy, especially when related to overweight and obesity (IBGE, 2010).

Another finding that merits attention is the large difference observed in our study between the mothers' perceptions of their own diets and those of their children. This could be explained by the fact that the mothers may not perceive inadequacies in their children's diets as clearly as they do with respect of their own dietary behavior. In this sense, a comparison could be made with the difficulty mothers have in identifying problems related to their children's nutritional state. Brazilian and international studies have shown that, although women can identify their own nutritional status properly, they have great difficulty in identifying their children's nutritional status adequately, especially in cases of overweight or obesity (Francescatto *et al*, 2014; Guerrero *et al*, 2010; Boa-Sorte *et al*, 2007; Hackie & Bowles, 2007).

It is possible that the mothers had difficulties perceiving problems with the food provided to and/or consumed by their children, as affirming that their

children's diets are not healthy can be seen as recognition by these mothers that they are providing low-quality food to their children. This reflection brings up historical and social questions about the role of the mother, who has been assigned the responsibility of providing nutrition to her child. Women have been held responsible and blamed (even by themselves) when something happens that is not socially desirable or expected (Moura & Araújo, 2004; Ramos & Almeida, 2003). Thus, it is possible to believe that affirming that a child's diet is not healthy would be tantamount to admitting (explicitly or not) to an inappropriate maternal behavior worthy of reprimand or blame. This is especially true in regard to diet, which is associated with a general state of health and imbued with affective connotations (Rotenberg & Vargas,2004).

With regard to the reasons reported by the mothers to justify their perceptions of their children's diets as healthy or not, the same catagories as those previously cited were identified. Diet quality (with an emphasis on the types of foods consumed) was again used as the criterion that guided such perceptions. It was possible to observe similarities in the values the mothers attributed to some specific types of food, both in relation to their children's diets and to their own.

In the case of the mothers who consider their children's diets to be healthy, it is worth noting their emphasis on the important role of natural and traditional foods in Brazilian cuisine, such as rice, beans, meat, fruits and vegetables. These mothers reported that they considered their children's diets to be healthy because they consumed these types of foods. Among the mothers who did not consider their children's diets to be healthy, ultra-processed foods and foods of low nutritional value such as salty snacks, sweets, soft drinks and

sugary artificial juices were presented as being responsible for the compromised diet quality. Thus, it can be assumed that healthy feeding was analyzed by most of the mothers in a one-dimensional manner, observing only one of a diet's characteristics - in this case, its quality (the types of foods provided). This finding agrees with the potential difficulty (mentioned above) of considering all of the aspects involved in the concept of healthy eating, as is indicated in the literature (Oli *et al*, 2015). The mothers appear to select a specific criterion and not to consider others that are potentially relevant.

Finally, the only significant association found regarding the mothers' perception that their children's diets are healthy was with maternal schooling of eight years or more. This result may suggest that mothers with more schooling believe that their children's diets are healthier because they possibly have more information and greater discernment about the subject and are therefore able to analyze other aspects related to diet quality besides merely the types of food their children eat. Such findings agree with the literature on this topic, as studies conducted in Brazil (Saldiva *et al*, 2014) and other countries (Brekke, Van Odijk & Ludvigsson, 2007) have demonstrated an association between a higher maternal educational level and a higher diet quality for their children in regard to several aspects, such as greater fruit and vegetable consumption and reduced consumption of food with low nutritional value. It is worth emphasizing that the fact that mothers with more schooling more commonly report that their children's diets are healthy does not necessarily correspond to the food provided to their children. However, one can assume that these mothers have more physical and financial resources to provide their children with appropriate food.

Final Considerations

This study contributes to a better understanding of women´s perceptions of their own diets and the diets of their 2 to 3-year-old children, considering the criterion of being healthy or not. The differences observed among these perceptions indicate a need for a differentiated approach in caring for the nutrition of both mothers and children. It is important to clarify that, although the nutritional needs of each age group are different, a healthy diet can be generalized for all family members. Furthermore, it is necessary to approach each person individually, considering his/her perceptions and beliefs, in order to provide effective and individualized care.

One interesting aspect that can be highlighted in regard to the association analyses conducted in the present study is the fact that maternal schooling is inversely associated with the perception of diet quality, both in terms of the mother's diet and the child's. This apparent contradiction can lead to a reflection on the different female roles as woman and mother (Moura & Araújo, 2004) and about how the interviewees may think and behave differently about their own diets and the food they provide to their children, as well as about other health and general care behaviors, regardless of socio-economic or demographic characteristics.

Therefore, it is important to conduct new studies on this topic to investigate the subjective meanings of mothers´ attributions to their children´s diets. This type of study could help professionals identify the mechanisms involved in the process of recognizing behaviors related to children´s diets and health. The importance of such a detailed investigation lies in the fact that the failure to recognize children's eating behaviors leads to a predisposition to diet-

related diseases caused by excessive amounts of food and/or a lack of nutrients in a child's diet (Adamo & Brett, 2014).

One of the present study's potential limitations is the fact that it did not analyze the relationships between maternal perceptions of their own diets and those of their children and the dietary and/or nutritional data of the sample in question. However, this was a methodological choice, as the dietary characteristics of Brazilian children in this age group have already been frequently analyzed (Carvalho *et al*, 2015; Valmórbida & Vitolo, 2014), as opposed to maternal perceptions about the subject which, as the present study shows, should be considered by professionals who provide health care to children and their families.

Therefore, it can be considered a strong point that this study focuses on mothers' perceptions of their own diets and those of their children in early childhood. The ability of parents to accurately identify what a healthy diet is can be essential to the success of programs to promote healthy eating habits for this age group. This knowledge can assist health professionals in more effectively counseling people in the public health context as they deal much more with patients' perceptions than with their actions. Understanding and intervening in regard to perceptions gives health professionals a greater chance to guide patients in modifying their dietary behaviors.

As was recently highlighted in a review study (Adamo & Brett, 2014), there are many parental perceptions related to children's diets that may not be compatible with scientific criteria. Therefore, studies on this topic are still quite necessary (Adamo & Brett, 2014). In fact, all efforts must be directed at improving children's diets, mainly due to their impact on growth and

development beyond childhood. Therefore, we re-emphasize the importance of this type of investigation, since to invest in actions aimed at improving children's health is to invest in the quality of life of the whole population.

References

Adamo, K.B. & Brett, K. (2014) *Parental Perceptions and Childhood Dietary Quality.* Maternal and Child Health Journal, v.18, p. 978-995, doi: 10.1007/s10995-013-1326-6.

Ajzen, I. & Madden, T.J. (1986) *Prediction on goal-directed behavior: attitudes intentions and perceived behavior control.* Journal of Experimental Social Psychology, San Diego, v. 22, p. 453-474.

Bardin, L. (2004) *Análise de Conteúdo.* [in Portuguese] 3ª Ed. Lisboa: Edições 70.

Barroso, C.S.; Roncancio, A.; Hinojosa, M.B. & Reifsnider, E. (2012) *The association between early childhood overweight and maternal factors.* Childhood Obesity, v. 8, n. 5, p. 449-54, doi: 10.1089/chi.2011.0094.

Blissett, J. & Fogel, A. (2013) *Intrinsic and extrinsic influences on children's acceptance of newfoods.* Physiology & Behavior, v.10, n. 121, p. 89-95, doi: .1016/j.physbeh.2013.02.013.

Birch, L. (1998) *Development of food acceptance patterns in the first years of life.* The Proceedings of the Nutrition Society, v. 57, n. 4, p. 617-24.

Boa-Sorte, N.; Neri, L.A.; Leite, M.E.; Brito, S.M.; Meirelles, A.R.; Luduvice, F.B. & Ribeiro, H.C. Jr. (2007)**.** *Maternal Perception and Self-perception of the Nutritional Status of Children and Adolescents from Private Schools*. Jornal de Pediatria, vol. 83, n. 4, p. 349-356.

Brazil. Ministry of Health. (2002) *Dez passos para uma alimentação saudável: guia alimentar para menores de dois anos* [in Portuguese]. Brasília, Brazil: Ministry of Health.

Brazil. Ministry of Health. Secretary of Health Care. Department of Primary Care (2014) *Guia Alimentar para a População Brasileira.* 2. ed. [in Portguese]– Brasília: Ministry of Health.

Brekke, H.K.; Van Odijk, J. & Ludvigsson, J. (2007) *Predictors and dietary consequences of frequent intake of high-sugar, low-nutrient foods in 1-year-old children participating in the ABIS study.* The British Journal of Nutrition, vol. 97, p. 176–181.

Broilo, M.C.; Louzada, M.L.C.; Stenzel, L.M. & Vitolo, M.R. (2013). *Maternal perception and attitudes regarding healthcare professionals' guidelines on feeding practices in the child's first year of life.* Jornal de Pediatria, v. 89, n. 5, p. 485-91, doi: 10.1016/j.jped.2013.01.005.

Camargo, A.P.P.M.; Barros Filho, A.A.; Antonio, M.A. & Giglio, J.S. (2013) *The non perception of obesity can be an obstacle to the role of mothers in taking care of their children.* Ciência & Saúde Coletiva, vol.18, n.2, p. 323-333.

Carvalho, C.A.; Fonsêca, P.C.; Priore, S.E.; Franceschini, S.C. & Novaes, J.F.

(2015) *Food consumption and nutritional adequacy in Brazilian children: a systematic review.* Revista Paulista de Pediatria, vol.33, n.2, pp. 211-221, doi: 10.1016/j.rpped.2015.03.002.

Fishbein, M. & Ajzen, I. (1975) *Belief, attitude, intention and behavior: an introduction to theory and research.* Massachusets: Addison Wesley.

Forestell, C.A. & Menella, J.A. (2007) *Early determinantes of fruit and vegetables acceptance.* Pediatrics, v.120, n.6, p.1247-54.

Francescatto C.; Santos, N.S.; Coutinho, V.F. & Costa, R.F. (2014) *Mothers' perceptions about the nutritional status of their overweight children: a systematic review.* Jornal de Pediatria, vol. 90, p. 332-43, doi: 10.1016/j.jped.2014.01.009.

Giles, M.; McClenahan, C.; Cairns, E. & Mallet, J. (2004) *An application of the Theory of Planned Behaviour to blood donation: the importance of self-efficacy.* Health Education Research, v. 19, n. 4, p. 380-91.

Guerrero, A.D.; Slusser, W.M.; Barreto, P.M.; Rosales, N.F. & Kuo, A.A. (2010) *Latina Mother's perceptions of Healthcare Professional Weight Assesments of Preschool-Aged Children.* Maternal and Child Health Journal, vol. 15, n. 8, p. 1308-15, doi: 10.1007/s10995-010-0683-7.

Guidetti, M. & Cavazza, N. (2008) *Structure of the relationship between parents' and children's food preferences ans avoidances: an explorative study.* Appetite, v. 50, n. 1, p. 83-90.

Hackie, M. & Bowles, C.L. (2007) *Maternal Perception of their overweight children.* Public Health Nursing, vol. 24, n. 6, p. 538-546.

Hart, C.N.; Raynor, H.A.; Jelalian, E. & Drotar, D. (2010) *The association of maternal food intake and infants' and toddlers' food intake.* Child: Care, Health and Development, v. 36, n. 3, p. 396-403, doi: 10.1111/j.1365-2214.2010.01072.x.

Instituto Brasileiro de Geografia e Estatística (IBGE). (2010) Pesquisa de Orçamentos Familiares 2008–2009 [in Portuguese]. Rio de Janeiro, Brazil: Brazilian Institute of Geography and Statistics.

Jomori, M.M.; Proença, R.P.C. & Calvo, M.C.M. (2008) *Food Choice Factors.* Revista de Nutrição de Campinas, 21(1):63-73. doi.org/10.1590/S1415-52732008000100007.

Kennedy, E.T.; Ohls, J.; Carlson, S. & Fleming, K. (1995) *The Healthy Eating Index: design and applications.* Journal of the American Dietetic Association, v. 95, p. 1103–1108.

Kourlaba, G.; Kondaki, K.; Grammatikaki, E.; Roma-Giannikou, E. & Manios, Y. (2009) *Diet quality of preschool children and maternal perceptions/misperceptions: The GENESIS study.* Public Health, vol. 123, p. 738-742, doi: 10.1016/j.puhe.2009.10.005.

Kröller, K.; Jahnke, D. & Warschburger, P. (2013) *Are maternal weight, eating and feeding practices associated with emotional eating in childhood?* Appetite, v. 65, p. 25–30, doi: 10.1016/j.appet.2012.11.032.

Luder, H.; Frede, S.; Kirby, J.; King, K. & Heaton, P. (2015) *Health Beliefs Describing Patients Enrolling in Community Pharmacy Disease Management Programs.* Journal of Pharmacy Practice, vol. 20, pii: 0897190014566311.

Menella, J.A. & Beauchamp, G.K. (2005) *Understanding the origin of flavor preferences.* Chemical Senses, v.30, n.1, p.i242-i243; Suppl 1:i242-3.

Menella, J.A. & Trabulsi, J.C. (2012) *Complementary foods and flavor*

experiences: setting the foundation. Annals of Nutrition & Metabolism, vol.60, Suppl 2, p. 40-50, doi: 10.1159/000335337.

Michaelsen, K. F.; Larnkjaer, A.; Lauritzen, L. & Mølgaard, C. (2010) *Science base of complementary feeding practice in infancy.* Current Opinion in Clinical Nutrition and Metabolic Care, v. 13, n. 3, p. 277-83.

Michner, H.; Delamater, J. & Myers, D. (2005) *Social Psychology.* São Paulo: Thomson. [in portuguese].

Moura, S.M.S.R. & Araújo, M.F. (2004) *A Maternidade na História e a História dos Cuidados Maternos.* [in Portuguese] Psicologia Ciência e Profissão, vol.24 (1), p.44-55.

Oli, N.; Vaidya, A.; Subedi, M; Eiben, G. & Krettek, A. (2015) *Diet and physical activity for children's health: a qualitative study of Nepalese mothers' perceptions.* BMJ Open, vol.5: e008197, doi:10.1136/bmjopen-2015-008197.

Ramos, C.V. & Almeida, J.A.G. (2003) *Maternal allegations for weaning: qualitative study.* Jornal de Pediatria, vol.79(5), p.385-90.

Rodgers, R. F.; Paxton, S.J.; McLean, S.A.; Campbell, K.J.; Wertheim, E.H.; Skouteris, H. & Gibbons, K. (2013) *Do maternal body dissatisfaction and dietary restraint predict weight gain in young pre-school children? A 1-year follow-up study.* Appetite, v. 67, p. 30-6, doi: 10.1016/j.appet.2013.03.009.

Rotenberg, S. & Vargas, S. (2004) *Nutrition habits and healthcare: feeding the children and the family.* Revista Brasileira de Saúde Materno Infantil, vol.4, n.1, p.85-94, doi.org/10.1590/S1519-38292004000100008.

Saldiva, S.R.; Venancio, S.I.; de Santana, A.C.; da Silva Castro, A.L.; Escuder, M.M. & Giugliani, E.R. (2014) *The consumption of unhealthy foods by Brazilian children is influenced by their mother's educational level.* Nutrition Journal, vol.3; n. 1, p.33, doi: 10.1186/1475-2891-13-33.

Sansbury, B.; Dasgupta, A.; Guthrie, L. & Ward, M. (2014) *Perrspective and Medication Adherence among Individuals with Hypertension or Diabetes Mellitus.* Patient Education and Counseling, vol. 95(1): 104–110, doi:10.1016/j.pec.2013.12.016.

Schwartz, C.; Issanchou, S. & Nicklaus, S. (2009) *Developmental changes in the acceptance of the five basic tastes in the first year of life.* British Journal of Nutrition, v.102, n.9, p.1375-85. doi: 10.1017/S0007114509990286

Skinner J.; Carruth, B.R.; Wendy, B. & Ziegler, P.J. (2002) *Children's food preferences: a longitudinal analysis.* Journal of the American Dietetic Association, v.102, n.11, p. 1638-1647.

Sparrenberger K.; Friedrich, R.R.; Schiffner, M.D.; Schuch, I. & Wagner, M.B. (2015) *Ultra-processed food consumption in children from a Basic Health Unit.* Jornal de Pediatria, vol. 91, p.535–42, doi: 10.1016/j.jped.2015.01.007.

Stafleu, A.; Van Staveren, W.A.; De Graaf, C.; Burema, J. & Hautvast, J.G. (1995) *Family resemblance in beliefs, attitudes and intentions towards consumption of 20 foods; a study among three generations of women.* Appetite, v. 25, n. 3, p. 201-6.

Straub, R.O. *Psicologia da Saúde: Uma abordagem Biopsicossocial.* [in Portuguese] Ed. Artmed, 3ª ed., 2014.

Wang, W.C.; Worsley, A. & Cunningham, E.G. (2008) *Social ideological*

influences on reported food consumption and BMI. The International Journal of Behavioral Nutrition and Physical Activity, v. 16, p. 5:20, doi: 10.1186/1479-5868-5-20.

Wisting, L.; Bang, L.; Natvig, H.; Skrivarhaug, T.; Dahl-Jørgensen, K.; Lask, B. & Rø, Ø. (2016) *Metabolic Control and Illness Perceptions in Adolescents with Type 1 Diabetes.* Journal of Diabetes Research, Volume 2016, Article ID 3486094, doi.org/10.1155/2016/3486094.

Valmórbida J.L. & Vitolo, M.R. (2014) *Factors associated with low consumption of fruits and vegetables by preschoolers of low socio-economic level.* Jornal de Pediatria, vol. 90, p.464–71, doi: 10.1016/j.jped.2014.02.002.

Vitolo, M.R.; Louzada, M.L.C. & Rauber, F. (2014) *Positive impact of child feeding training program for primary care health professionals: a cluster randomized field trial.* Brazilian Journal of Epidemiology, vol. 17(4), p. 873-886.

Table 1: Categorization and distribution of responses regarding mothers' perceptions of their own diets (n=464)

Perception of own diet as healthy (n=197, 43%)			**Perception of own diet as unhealthy (n=267, 57%)**		
Themes / Examples of Responses	**n**	**%**	**Themes / Examples of Responses**	**n**	**%**
Quality "Because I don't drink sodas or eat junk food" "I avoid unhealthy foods, I avoid oils" "I eat healthy things" "Because I try to eat little sugar and salt" "I don't eat much fried food and I don't mix carbohydrates" "I eat homemade food"	135	70.7	**Quality** "I eat a lot of bread" "I don't like fruits and vegetables much" "I eat a lot of junk food" "Because I eat more junk food than healthy food"	186	74.1
Variety "I eat everything" "I eat everything, I'm not picky" "Because I try to vary my diet"	28	14.7	**Regularity or Routine** "I don't eat lunch or breakfast" "I don't have a fixed eating schedule, I don't eat breakfast" "I eat few meals during the day"	75	29.9
Regularity or Routine "I am eating regularly" "I am eating all the time" "I eat breakfast, lunch and dinner" "I make lunch and dinner every day"	17	8.9	**Quantity** "I eat very little" "I eat way too much" "I don't eat much..."	20	8
Perceived Health Outcomes "Because I go to the doctor and I don't have any problems" "I'm trying to lose weight"	15	7.9	**Perceived Health Outcomes** "After finding out I have cancer, I haven't eaten properly" "I'm about 10 kg overweight"	9	3.6
Doesn't Know "I don't know" "It's healthy but I don't know why"	11	5.8	**Variety** "Because I spend the day eating bread and coffee" "Because I'm not used to it and I don't like some foods" "I only eat the basics: rice and beans"	03	1.2
Quantity "I eat normally, I usually don't eat much" "Because I eat a lot" "I don't eat much"	7	3.7	**Doesn't know** "I don't know"	02	0.8

Data lacking (n=22): mothers who didn't answer the question: *"Do you consider your diet to be healthy? If so, why? If not, why not?"*

Table 2: Categorization and distribution of responses regarding mothers' perceptions of their children's diets (n=464)

Perception of child's diet as healthy (n=334, 72%)			**Perception of child's diet as unhealthy (n=130, 28%)**		
Themes / Examples of Responses	**n**	**%**	**Themes / Examples of Responses**	**n**	**%**
Quality "He always eats vegetables and meat" "He avoids salty snacks, 'snacks, soft drinks, instant noodles" "Because he eats the main foods with iron and vitamins" "Because I try to give him healthy food"	210	68.6	**Quality** "He eats a lot of fried foods" "He should have more fruits and vegetables" "Because he eats a lot of junk food" "He doesn't eat well, he was eating a lot of snacks, sweets, junk food"	95	78.5
Variety "He eats everything" "He eats everything, he's balanced" "He eats everything, he doesn't refuse anything"	46	15	**Quantity** "Because he doesn't eat anything" "He only eats a little of everything" "Because he doesn't eat enough to be healthy"	14	11.6
Regularity or Routine "He eats breakfast, lunch, an afternoon snack and, before going to sleep, drinks from his milk bottle" "Because he eats at the time" "Because he eats and makes all the meals of the day"	26	8.5	**Variety** "He doesn't eat everything he should" "Because he doesn't eat anything, practically only milk" "He only likes to drink milk"	12	9.9
School meals "Because he eats well at school" "Meals aren't made at home, only at school"	21	6.9	**Regularity or Routine** "Because there is no routine for the preparations, for making vegetables every day" "He doesn't have a regular diet"	12	9.9
Perceived Health Outcomes "Because he is gaining weight" "Because he is always well when he sees the doctor"	17	5.6	**Perceived Health Outcomes** "He has a stomach ache" "He is lactose-intolerant"	3	2.5
Quantity "He eats a lot" "Because he eats well, he eats a lot" "Because he eats everything"	16	5.2	**Doesn't know** "I don't know"	2	1.7
Doesn't know "I don't know"	6	2			

Data lacking (n=37): mothers who didn't answer the question: *"Do you consider your child's diet to be healthy? If so, why? If not, why not?"*

Table 3: Association between mothers' perception of their own diets and personal and family characteristics (n=464)

	Mothers' Perception of Diet as Healthy (n=197, 43%)		Univariate Poisson Regression			Multivariate Poisson Regression		
	N	%	PR	CI 95%	P value	PR	CI 95%	P value
Group[¥]								
Control	82	36.8						
Intervention	115	48.9	1.331	1.072 – 1.652	0.010	1.320	1.063 – 1.640	0.012
Age								
<20 years	35	43.2						
>= 20 years	162	43	0.994	0.755 – 1.310	0.969	-	-	-
Schooling								
<8 years	107	49.8						
>= 8 years	90	37	0.744	0.602 – 0.920	0.006	0.707	0.569 – 0.880	0.002
Marital Status								
Does not have partner	51	48.6						
Has partner	146	41.4	0.852	0.675 – 1.075	0.176	0.918	0.723 – 1.164	0.479
Mother's Occupation								
No formal employment	121	40.5						
Formal employment	76	47.8	1.181	0.955 – 1.461	0.125	1.225	0.987 – 1.519	0.065
Family Income*								
<2 Brazilian minimum wages[§]	88	42.9						
>=2 Brazilian minimum wages[§]	101	42.4	0.989	0.796 – 1.227	0.917	-	-	-
Parity								
Primiparous	83	41.9						
Multiparous	114	43.8	1.046	0.844 – 1.296	0.681	-	-	-

[¥] Group in which the mother-child pair was assigned to the follow-up study (to receive guidance from updated professionals or control group professionals).
[†] Data lacking (n=5) * Data lacking (n=8)
[§] 1 Brazilian minimum wage corresponds an amount of U$155.00 for month at the time of data collection.

Table 4: Association between mothers' perception of their children's diets and personal and family characteristics (n=464)

	Maternal Perception of Child's Diet as Healthy (n=334, 72%)		Univariate Poisson Regression			Multivariate Poisson Regression		
	n	%	RP	IC 95%	P value	RP	IC 95%	P value
Group[¥]								
Control	154	69.1						
Intervention	180	74.7	1.082	0.964 – 1.213	0.180	1.063	0.946 – 1.194	0.306
Age								
<20 years	52	63.4						
>= 20 years	282	73.8	1.164	0.977 – 1.387	0.089	1.139	0.951 – 1.364	0.158
Schooling								
<8 years	143	66.2						
>= 8 years	191	77	1.163	1.035 – 1.308	0.011	1.136	1.011 – 1.278	0.033
Marital Status								
Does not have partner	80	75.5						
Has partner	254	70.9	0.940	0.828 – 1.068	0.341	-	-	-
Mother's Occupation								
No formal employment	213	70.1						
Formal employment	121	75.6	1.079	0.962 – 1.210	0.192	1.035	0.919 – 1.165	0.575
Family Income*								
<2 Brazilian minimum wages[§]	150	71.8						
>=2 Brazilian minimum wages[§]	176	73.3	1.022	0.911 – 1.145	0.712	-	-	-
Parity								
Primiparous	151	74.8						
Multiparous	183	69.8	0.934	0.835 – 1.046	0.239	-	-	-

[¥] Group in which the mother-child pair was assigned to the follow-up study (to receive guidance from updated professionals or control group professionals).
* Data lacking (n=8)
[§] 1 Brazilian minimum wage corresponds an amount of U$155.00 for month at the time of data collection

4. Artigo 2

“What can I do when he doesn’t want to eat?”: Maternal Strategies for Ensure Children’s Food Consumption in Early Childhood

Broilo, M.C.; Vitolo, M.R.; Stenzel, L.M.; Levandowski, D.C.

Mônica Cristina Broilo, Doutoranda em Ciências da Saúde pela UFCSPA

Universidade Federal de Ciências da Saúde de Porto Alegre (UFCSPA)

Artigo a ser Submetido em Maio de 2016 ao Periódico *Acta Psychologica*

“What can I do when he doesn’t want to eat?”: Maternal Strategies for Ensure Children’s Food Consumption in Early Childhood

Abstract:
This cross-sectional analysis in a cluster-randomized field trial aimed to analyze the strategies used by mothers of children aged 2-3 to ensure their food consumption as well as to investigate the maternal and family characteristics associated with using these strategies. Data of 463 mothers who use the public health care system in Porto Alegre, Brazil, were analyzed. Among these mothers, 58.5% used some type of strategy. However, 42.4% of mothers did not realize their behavior. In regard to the type of strategy used, 69% were classified as information strategies and 43.2% as trading strategies. Maternal age and educational level were inversely associated with the use of trading strategies ($p<0.05$). In 46.9% of the cases, some types of food were involved in the mothers’ strategies, generally ultra-processed foods (46.3%). We conclude that the use of strategies to promote children’s food consumption considered appropriate by the mothers is a fairly common practice. Health care professionals should consider mothers’ perceptions and attitudes about the subject in order to conseil them as to the best feeding practices for their children, as the use of these strategies can be detrimental to the formation of eating behaviors.
Key-words: Mothers; Child Nutrition; Feeding Behavior; Perception; Strategies; Food Habits.

Highlights:

Mothers often use strategies to ensure their children’s food consumption.

Many mothers do not realize that they use strategies for this purpose.

The mothers’ strategies were classified as information or trading strategies.

The mothers’ strategies often involve the use of ultra-processed foods.

Some maternal characteristics are associated with the use of trading strategies.

1. Introduction

The literature shows that an individual's eating behaviors begin to form in the gestational period, when a baby is exposed to the flavors of the amniotic fluid, which are determined by the mother's diet (Cooke & Fildes, 2011; Mennella, Jagnow & Beauchamp, 2001). However, the first three years of life are also fundamental to developing diet-related behaviors. Some very important dietary practices are established in this period, such as breastfeeding (or offering a substitute food), the introduction of complementary food and a child's entry into the family's habitual dietary patterns (Nicklaus, 2015; Schwartz *et al*, 2011; Cooke & Fildes, 2011).

Although some aspects of eating behavior may be influenced by genetic factors (such as an innate preference for certain flavors), it is known that a child's environment shapes his/her food preferences. Specifically, the behaviors experienced and learned in the first years of life can determine an individual's dietary style for the rest of his/her life (Ventura & Worobey, 2013; Kral & Rauth, 2010). This indicates the importance of the family environment to the formation of children's eating behaviors, as parents are responsible for providing their children with their first experiences related to food and eating. Thus, there are many parental behaviors that can influence children's eating habits - e.g. their own eating behaviors, the foods they make available to their children and the way they feed them (Scaglioni, Salvioni & Galimberti, 2008).

The main responsibility for child care has traditionally fallen upon women (Moura & Araújo, 2004; Ramos & Almeida, 2003). Therefore, mothers still play a central role in raising and feeding their children. One recurrent concern among mothers (especially those of children in the first years of life) is providing

appropriate food to their children (in terms of quality and quantity) that will ensure their growth and healthy development (Michaelsen *et al*, 2010). This concern is consistent with the important role that diet plays in an individual's current and long-term health (Johnson *et al*, 2015).

Due to this concern and in the face of children's refusal to eat, mothers often use strategies to ensure that they eat or that they eat a greater amount of food among those they consider ideal (Adamo & Brett, 2014). These maternal strategies to ensure children's food consumption can range from using playful incentives and explanations about the importance of food to health, to rewarding desired behaviors or even using more coercive mechanisms, such as mild or severe punishments (Mayer, Weber & Ton, 2014; Tung & Yeh, 2014; Hendy *et al*, 2009; Ventura & Birch, 2008).

The mothers' use of these strategies is strongly influenced by their children's characteristics, such as birth weight, nutritional status in the first years of life, health outcomes and personality/behavioral characteristics. These characteristics can influence or even determine parental feeding styles, leading parents to adopt strategies such as pressuring their children to eat (Fildes *et al*, 2015; Carnell *et al*, 2014; Jansen *et al*, 2012) or restricting certain kind of foods and/or amounts (Hendy *et al*, 2009).

The literature shows that strategies that attempt to stimulate a child to eat in the face of his/her refusal can be detrimental to the formation of the child's eating behaviors, as they may cause dietary self-regulation problems. These difficulties, in turn, can lead to eating disorders, obesity, emotional eating, the restriction of certain kind of foods and overeating at times when access to food is not restricted (Kröller, Jahnke & Warschburger, 2013; Hendrie *et al*, 2013;

Scaglioni, Salvioni & Galimberti, 2008). Therefore, the present study aimed to identify the types of strategies used by mothers of children aged 2-3 to ensure their food consumption as well as the mothers' perceptions about this use. It also aimed to investigate potential maternal and family characteristics associated with the use of different types of strategies.

2. Method

2.1. Design

This is a cross-sectional analysis of data collected in a follow-up study (Vitolo, Louzada & Rauber, 2014). This larger study aimed to assess the impact of an educational intervention conducted with health care center (HCC) professionals on health outcomes of children whose mothers were treated by these professionals during pregnancy. In regard to the present study's sample randomization in relation to the larger study's group allocation (intervention or control), no significant association was found for any of the variables analyzed in the present study. Therefore, the randomization was not considered in the other analyses conducted.

2.2. Participants

We interviewed 474 women for the present study. Of these, 11 were excluded because they did not respond to questions about the strategies they used to ensure their children's food consumption. Therefore, a sample of 463 mothers was considered. The participants' socio-economic and demographic characteristics are shown in Table 1.

2.3. Procedures and Instruments

The members of the data collection team went to the randomized HCC and identified women in their third trimester of pregnancy. The potential

participants were informed about the study's aims and were invited to participate by signing a Consent Form. They then filled out a questionnaire on socio-economic, demographic and family data. Also were obtained the expected date of birth, address and telephone number for subsequent home visits.

The larger research project involved collecting data at the participants' home in three subsequent stages: when the children were aged 6-9 months, 12-16 months and 2-3 years. Data on the children's health and diet were collected during these visits. Exclusion criteria were HIV-positive women and children born with congenital diseases. It is worth highlighting that the data collection team was comprised of undergraduate and post-graduate students in nutrition and psychology who were trained on the study's procedures.

The present study analyzed maternal and family socio-economic and demographic data collected during pregnancy as well as maternal data related to the use of strategies to ensure their children's food consumption collected when the children were 2-3 years old. More specifically, the following questions were considered to investigate such strategies: *"Do you need to use a strategy to make your child eat? If so, what?* (Q1) *If not, what do you do if he/she doesn't want to eat?"* (Q2).

2.4. Data Analysis

All of the collected data were entered into a database and subjected to double entry in the Statistical Package for Social Science (SPSS) v.19.0 software program. The data were validated with the Epi Info v.6.4 program. The prevalence of the use of strategies to ensure children's food consumption and maternal perceptions of the use of these strategies were quantified and

presented in absolute frequencies. The use of strategies by the interviewees was considered confirmed when they responded affirmatively to Q1 (*"Do you need to use a strategy to make your child eat?"*) or even when they responded negatively to Q1 but reported using some type of strategy in Q2 (*"If not, what do you do when he/she doesn't want to eat"*). It was considered confirmed that the interviewees realized that they used strategies to ensure their children's food consumption when they responded affirmatively to Q1 and that they did not realize this when they responded negatively to Q1 but positively to Q2, referring to some type of strategy.

After quantifying these variables (the use of strategies and mothers' perceptions of such use), we checked for any associations between them and maternal and family characteristics. To this end, we used Univariate Poisson Regression with a robust estimate. Variables with $p \leq 0.20$ were analyzed using Multivariate Poisson Regression with a robust estimate to check their association independently. The significance level was considered to be $p<0.05$.

To present the types of strategies used by the mothers, answers to the open questions Q1 (*Do you need to use a strategy to make your child eat? If so, what?)* and Q2 (*If not, what do you do when he/she doesn't want to eat?)* were classified using content analysis (Bardin, 2004). The responses were first transcribed verbatim. A pre-analysis was done with an initial reading of the participants' answers and the formulation of preliminary categories according to their content. In the next stage, the material was explored and the responses were read again and classified into the initially-created categories. During this process, the categories were reviewed by three researchers (experts) to assess their suitability and mutual thematic exclusion. Whenever the categorical

structure was found to be satisfactory, a researcher would again assign the responses to their respective categories. Questions about this new classification were settled by discussion and consensus with the other two researchers. Finally, the response categories were quantified for presentation in relative frequencies.

To facilitate the creation of the category's structure, Hoffman's proposal about child-rearing practices (1975; 1979) was used as guiding criteria. According to this author, these practices can be grouped into two main categories: coercitive and inductive. Coercitive practices are considered to be those that involve punitive behaviors such as verbal/physical punishment, denial of privileges, threats of punishment or even affection withdrawal. On the other hand, inductive practices are those that involve the use of explanations to the children, non-coercitive verbal commands, explanations about the behavior's importance and even changes to the family environment (Hoffman, 1975; Hoffman, 1979). Although the author has not worked specifically with dietary practices, this classification allows for a better understanding of the behaviors referred to by mothers regarding this topic.

However, while categorizing the responses, it was possible to identify another quite common strategy that did not fit into the model proposed by Hoffman (Hoffman, 1975; Hoffman, 1979): the reward strategy. This was therefore considered as a separate category, as it has characteristics that differ from the others, because this type of strategy offers something as a reward to children for behaviors that are expected/desired by the mothers, thus reinforcing such behaviors.

Considering the initially-proposed categories (inductive and coercitive) as well as this new grouping (strategies that use rewards), the responses were re-categorized accordingly: 1) information strategies (which include all inductive strategies identified) and, 2) trading strategies (which include coercitive and reward strategies). This subsequent categorization was carried out with the understanding that inductive strategies are those in which mothers somehow provide information to their children using explanations and/or arguments. On the other hand, in the coercitive and reward strategies, mothers employ material or affective resources on their children in exchange for a desired behavior - consuming food, in this case. The different strategies used by the mothers to ensure their children's food consumption (as identified during this data analysis process) are shown in Chart 1.

In addition to the analysis and thematic categorization of the strategies used by the mothers, we proceeded to another analysis that considered the use of foods in the different strategy types. The literature shows that it is quite common to use palatable foods as a bargaining mechanism (Blisset & Fogel, 2013; Carnell *et al*, 2011; Hendy *et al*, 2009). Thus, the present study analyzed the use of non-target foods (which were not the target of consumption desired by the mothers) as a way to ensure the food consumption considered appropriate for the children. More specifically, we verified the use of foods with low nutritional value, such as ultra-processed foods (i.e. products basically formulated from industrial ingredients that contain little or no food in their composition: biscuits (cookies), cakes and pastries; ice cream; chocolates, confectionery (candies), cereal bars, breakfast cereals with added sugar; chips, crisps; savoury and sweet snack products; sugared fruit and milk drinks,

sugared and ‘no-cal’ cola, and other soft drinks; processed meat including chicken nuggets, hot dogs, burgers). Such products are considered nutritionally unbalanced due to their high fat, sugar and/or salt content. They can also be rich in saturated and/or trans fat, and contain ingredients that make them hyper-palatable, potentially leading to the formation of unhealthy eating habits and even generating compulsions or dependence (Monteiro *et al*, 2015; Monteiro *et al*, 2011). These data were presented in relative frequencies. Pearson’s chi-square test was used to analyze the association between the use of food in the different strategies and the use of foods of low nutritional value.

2.5. Ethical Considerations

The major study was approved by the Research Ethics Committee of Universidade Federal de Ciências da Saúde de Porto Alegre (Protocols no. 748-11 and 921-12). The participants signed an Informed Consent Form in which they were informed of the study’s objectives and procedures, and had their questions answered. The participants’ names were kept confidential. In addition, participation in the study could be interrupted by the participants at any time without obligation and/or compromising the care they received at the HCC.

3. Results

The analyses revealed that 58.5% (n=271) of the women interviewed used some type of strategy to ensure their children’s food consumption. However, 42.4% of these women did not realize they were using this type of resource. Regarding the types of strategies used by the mothers, it was observed that 69% (n=187) of them used information strategies, including incentive to consume food (n=99) and control by the child him/herself (n=63). In

addition, 43.2% of the mothers reported using trading strategies to ensure their children's food consumption, especially punishment (n=76). The prevalences of the different types of strategies used by the mothers to ensure their children's food consumption are shown in Table 2.

The use of these kind of strategies was not associated with any maternal or family characteristic ($p>0.05$), nor was any significant association found between maternal and family characteristics and the perception of such use ($p>0.05$), as is shown in Table 3. However, a mother's perception of using some type of strategy (i.e. a mother's direct reference to using some type of artifice to ensure her child's food consumption) was significantly associated ($p=0.012$) with the use of trading strategies (coercitive or reward). It can be said that the mothers who used trading strategies perceived and clearly reported their use when compared with those who use other strategy types.

Furthermore, the use of trading strategies was significantly associated ($p\leq0.05$) with maternal age and schooling, as is also presented in Table 3. Adolescent mothers with less schooling used coercitive and reward strategies more frequently when feeding their children.

The use of foods other than those desired by the mothers to ensure their children's food consumption was also quite prevalent (46.9%, n=123), regardless of the type of strategy employed ($p>0,05$). In addition, in 46.3% (n=57) of the responses, the foods used were considered to be of low nutritional value, ie, when the mothers mentioned ultra-processed foods. Likewise, a significant association was observed between the use of trading strategies (coercitive and reward) and the use of foods of low nutritional value ($p<0.001$).

4. Discussion

The present study's data indicate that the use of different strategies by mothers to ensure that their children consume the amount of food they considered ideal, is quite prevalent and often unintentional - that is, it is not perceived as such. This finding agrees with other studies that have been conducted on this topic, which indicate that maternal concern about ensuring food consumption considered appropriate is a constant, regardless of the child's nutritional status (Blisset & Fogel, 2013; Kröller, Jahnke & Warschburger, 2013; Jansen *et al*, 2012; Michaelsen *et al*, 2010), which entails the use of these strategies.

The high prevalence of mothers using strategies to ensure their children's food consumption identified in the present study (around 60%) may be associated with the characteristics of children's eating behavior in the age group studied. Common to this stage are neophobia (a child's refusal of new foods offered to him/her) and physiological anorexia, which involves the natural reduction in a child's appetite caused by physiological changes common in child development (Blisset & Fogel, 2013; Kachani *et al*, 2005). Furthermore, there is a reduction in the growth rate, which leads to a reduction in appetite, as well as the fact that children at this age are focused on external stimuli, which can lead them to lose interest in food (Kachani *et al*, 2005). Thus, these child behaviors can cause anxiety for mothers, leading them to adopt measures to ensure their children's food consumption in order to reestablish their former dietary patterns.

Another aspect that deserves attention is the fact that the use of these strategies often aims to induce children to consume the amount of food considered appropriate by the mothers, which does not necessarily represent the children's nutritional needs. Studies have shown that parents/caretakers

often consider food quantity to be more important than food quality (Adamo & Brett, 2014) and have trouble identifying the appropriate amount of food to offer their children (Croker, Sweetman & Cooke, 2009). Another influencing factor in this subjective perception of food quantity is that fact that caretakers use the food servings often consumed by children as a reference, which again do not necessarily correspond to their energy needs. Likewise, intervention studies have reported that children tend to consume larger amounts of food when the portions served to them are larger (Fischer *et al*, 2007), regardless of age (Fischer, 2007), which demonstrates that their food consumption can be strongly influenced by extrinsic factors (Blisset & Fogel, 2013) such as the strategies used by mothers.

Therefore, as these studies show, caretakers' subjective perceptions of the amount of food to be offered to children can be detrimental to children's gradual development of an internal self-regulation mechanism and/or autonomy based on their own desires, preferences and especially their physiological hunger/satiety signals (McNally *et al*, 2015), which are vital to subsequent stages of their development. It is the construction of this internal assessment locus in this stage that will guide a child to future autonomy in regard to his/her food choices.

In this sense, it has been found that parents' eating behaviors (i.e. their dietary habits and preferences) may be the best means of stimulating appropriate eating practices in children, serving as an indirect model and incentive (Scaglioni, Salvioni & Galimberti, 2008) without inducing children to adopt any type of model imposed by their parents' subjective perceptions. An intervention study with families of obese children showed that changes in family

eating styles (e.g. eating healthier foods) improved children's dietary practices. In addition, when parents acquire greater knowledge about diet and nutrition and realize that it is most effective to be models for their children, their children's food consumption also improves significantly without the need to exert any type of external pressure (Hendrie *et al*, 2013).

Another topic investigated by the present study was maternal perception about the use of strategies to ensure their children's food consumption. According to the mothers' reports, it was possible to identify that 40% of them did not realize that they used such type of strategy, considering the responses to Q1, in which they reported such use only when the question was rephrased to ask in a different way (Q2). Furthermore, no maternal or family characteristic was associated with the perception of using these strategies. These results may indicate that, when mothers are faced with the common feeling of anxiety in relation to the appropriate feeding of their children, as is often referred to in the literature (Michaelsen *et al*, 2010), perhaps most of them consider the use of some strategy to ensure their children's food consumption to be a common or inherent practice when feeding them, and thus do not identify it as some type of uncommon or inappropriate strategy.

According to the data analyzed, maternal perception about the use of strategies was significantly associated with the use of trading strategies (coercitive and reward). This result is expected, mainly because information strategies (such as incentives, control by the child him/herself, distracting the child and/or masking the food) can be considered acts that are part of the child feeding routine. Thus, the mothers do not consider these acts to be "strategies". On the other hand, the act of punishing or rewarding generally involves a

physical, palpable object (which is withdrawn or offered to the child) or the imposition of a punishment and/or reward, which may be more recognizable as a strategy.

As for the third topic investigated, the analysis of the data collected also enabled the identification of different strategies used by mothers to ensure their children's food consumption, which have been classified here into two major categories: information strategies and trading strategies. In regard to child-rearing practices in general (as opposed to those only related to child feeding), it is known that inductive practices (i.e. strategies based on the use of information) can be considered more effective, as they guide children (especially at earlier ages) as to the behaviors considered to be appropriate by their parents in a more assertive manner. On the other hand, coercitive practices (even when mild) can generate negative feelings in children, thus causing them to link the knowledge to the coercion itself rather than to the expected behavior (Tudge, 2000). However, when focusing specifically on feeding practices, studies have emphasized that the use of different strategies with children (whether they involve pressure to eat/insistence, restriction, the use of rewards or even providing information about diet and nutrition) has been shown to be counterproductive, as it may lead to problems such as eating disorders, obesity and food restriction (Hendrie *et al*, 2013; Kröller, Jahnke & Warschburger, 2013; Jansen *et al*, 2012; Anzman, Rollins & Birch, 2010; Scaglioni, Salvioni & Galimberti, 2008). Therefore, it is generally understood that strategies that stimulate food consumption greater than desired by a child are not appropriate, as the compensatory mechanism may be detrimental to the formation of healthy eating behaviors (Sherry *et al*, 2004; De Decker & Rollins,

2014; Blisset & Fogel, 2013). Studies have emphasized that individuals who are rewarded for the act of eating may acquire a predilection for the reward (when it is another food), making this strategy unsuitable for promoting healthy child eating behavior and the acquisition of healthy eating habits, and potentially leading to various types of eating disorders (Mazarello Paes, Ong & Lakshman, 2015; Farrow, Haycraft & Blissett, 2015; Kiefner-Burmeister *et al*, 2014; Raaijmakers *et al*, 2014; Blisset & Fogel, 2013).

Regarding the fourth topic analyzed, it is worth noting that nearly 47% of the mothers reported using some type of food other than that targeted to the child as a form of encouragement, punishment or reward. In fact, the use of this type of resource was independently mentioned as a strategy they used (whether information or trading). When such foods are used, they are generally ultra-processed - that is, of low nutritional value (Monteiro et al, 2015; Monteiro et al, 2011) - and their consumption is not recommended for children, especially in the first years of life (Brazil, 2014; Brazil, 2010).

In particular, the use of trading strategies such as punishment and reward were significantly associated with the use of foods of low nutritional value, which is relevant when considering the formation of eating behaviors. As mentioned earlier, when a food is used as a target to stimulate a child's food consumption (in terms of quantity or specific foods used by the mother), this reward food becomes an object of predilection for the child, and can potentially determine his/her future eating practices (Blisset & Fogel, 2013). Thus, through this use, the child learns to symbolically associate the food with something positive and can in the future seek the food for its symbolic rather than its nutritional value.

Finally, in regard to the association analyses between mothers' strategies to ensure their children's food consumption and maternal and family characteristics, the use of trading strategies (coercitive and reward) was shown to be significantly more prevalent among adolescent mothers (those under age 20 at the time of their child's birth) and those with less schooling. It is known that socio-economic and demographic characteristics are important influencing factors on health-related behaviors. Both maternal age and maternal schooling have been shown to be determinants of or associated with risk behaviors related to diet and nutrition - from breastfeeding to feeding practices adopted for children (Holowko *et al*, 2016; Rauber *et al*, 2013). Thus, mothers with these characteristics should receive special attention from health care professionals due to their greater vulnerability. Furthermore, it has been identified in the literature that adolescent mothers are less knowledgeable about child development (Ribas Jr, Seidl de Moura & Bornstein, 2007) and thus should be treated with greater attention and care. In addition, several studies on mother-baby interaction have demonstrated a tendency among adolescent mothers to adopt more punitive behaviors toward their children (Seay et al, 2015; Levandowski, Piccinini & Lopes, 2008), which may also explain this finding about child feeding behaviors.

Besides the issues already mentioned, the literature indicates that the type of child-rearing practices adopted by parents is directly influenced by their educational level. Thus, parents with more schooling tend to use more inductive practices (Carmo & Alvarenga, 2012; Tudge *et al*, 2000) when compared to those with less schooling. The authors highlight that this difference is due mainly to the fact that parents with more schooling probably have greater

explanatory abilities and more resources to use to negotiate with their children, rendering the use of coercion unnecessary (Tudge *et al*, 2000). Therefore, the present study's findings agree with the aspects already pointed to in the literature, as adolescent mothers tend to have less schooling due to dropout and are often even still in school (Levandowski, Piccinini & Lopes, 2008; Chalem *et al*, 2007; Aquino *et al*, 2003).

5. Final Considerations

The present study identified a diversity of strategies used by mothers of children aged 2-3 to ensure their food consumption. However, although this study focused on mothers, it is known that all caretakers of children play an important role in their development. Therefore, the strategies they employ should be investigated for this child age group, as it can be presumed that a certain pattern exists in using these strategies.

The families in general should be concerned with providing a healthy eating environment for their children so that they can learn and recognize their own dietary needs (Blisset & Fogel, 2013; Scaglioni, Salvioni & Galimberti, 2008). If the eating environment is comfortable and relaxed and offers healthy foods, children tend to gradually learn to make their own food choices based on their preferences and needs. This becomes even easier when children are exposed to healthy habits by their parents, such as consuming natural foods in a varied and pleasureable manner.

However, in order for caretakers to be prepared to offer appropriate food to their children, they need to understand how a child's eating behavior develops (Benton, 2004) and that children have an innate ability to regulate their own food consumption (Ventura & Worobey, 2013; Scaglioni, Salvioni &

Galimberti, 2008). In this sense, the present study showed that actions aimed at promoting child nutrition should be primarily directed at parents and caretakers rather than at children (Scaglioni, Salvioni & Galimberti, 2008), as all dietary practices in early childhood are provided by the environment in which a child lives (family, school, caretaker, etc.), giving the child little control over his/her situation.

The present study's findings also show that health professionals need to be concerned not only about the quantity and quality of the food children eat, but also how their relationship to food and the act of eating is being developed. This relationship between the individual and the eating process may determine many outcomes related to health and disease, in regard to both the physical and psychological aspects (Scaglioni, Salvioni & Galimberti, 2008), and its development may suffer the influence of the strategies used by parents to ensure their children's food consumption.

Therefore, in order for health actions aimed at children to be more effective, it is essential for health professionals to pay attention to parents/caretakers' attitudes and beliefs about child feeding in early childhood, which includes knowing the strategies used by mothers to ensure their children's food consumption. It is known that the food children receive is directly related to the attitudes of parents about this subject (Adamo & Brett, 2014; Blisset & Fogel, 2013), and addressing these aspects during nutritional or child care consultations can prove vital to a child's health outcomes.

6. References

Adamo, K.B.; Brett, K. (2014) *Parental Perceptions and Childhood Dietary Quality.* Maternal and Child Health Journal, v.18, p. 978-995, doi: 10.1007/s10995-013-1326-6.

Anzman, S.L.; Rollins, B.Y. & Birch, L.L. (2010) *Parental influence on children's*

early eating environments and obesity risk: implications for prevention. International Journal of Obesity, vol. 34, 1116–1124.

Aquino, E.M.L.; Heilborn, M.L.; Knauth, D.; Bozon, M.; Almeida, M.C.; Araújo, J. & Menezes, G. (2003) *Adolescence and reproduction in Brazil: the heterogeneity of social profiles.* [in Portuguese] Cadernos de Saúde Pública, Rio de Janeiro, vol. 19(Sup. 2):S377-S388.

Bardin, L. (2004) *Análise de Conteúdo.* [in Portuguese] 3ª Ed. Lisboa: Edições 70.

Benton, D. (2004) *Role of parents in the determination of the food preferences of children and the development of obesity.* International Journal of Obesity and Related Metabolic Disorders: Journal of the International Association for the Study of Obesity, vol. 28(7):858-69.

Blissett, J. & Fogel, A. (2013) *Intrinsic and extrinsic influences on children's acceptance of newfoods.* Physiology & Behavior, v.10, n. 121, p. 89-95, doi: 10.1016/j.physbeh.2013.02.013.

Brazil. Ministry of Health. (2010) *Dez passos para uma alimentação saudável: Guia alimentar para crianças menores de dois anos.* [in Portuguese]. Brasília, Brazil: Ministry of Health, 2Ed.

Brazil. Ministry of Health. Secretary of Health Care. Department of Primary Care (2014) *Guia Alimentar para a População Brasileira.* 2. ed. [in Portguese]– Brasília: Ministry of Health.

Carmo, P.H.B. & Alvarenga, P. (2012) *Coercive childrearing practices in mothers from different socioeconomic levels.* [in Portuguese] Estudos de Psicologia, vol. 17(2), 191-197.

Carnell, S.; Benson, L.; Driggin, E. & Kolbe, L. (2014) *Parent feeding behavior and child appetite: associations depend on feeding style.* The International Journal of Eating Disorders, vol, 47(7):705-9. doi: 10.1002/eat.22324.

Carnell, S.; Cooke, L.; Cheng, R.; Robbins, A. & Wardle, J. (2011) *Parental feeding behaviours and motivations. A qualitative study in mothers of UK pre-schoolers.* Appetite, vol. 57(3):665-73. doi: 10.1016/j.appet.2011.08.009.

Chalem, E.; Mitsuhiro, S.S.; Ferri, C.P.; Barros, M.C.M.; Guinsburg, R. & Laranjeira, R. (2007) *Teenage pregnancy: behavioral and sociodemographic profi le of an urban Brazilian population.* [in Portuguese] Cadernos de Saúde Pública, Rio de Janeiro, vol.23(1):177-186.

Cooke, L.; Fildes, A. (2011) *The impact of flavour exposure in utero and during milk feeding on food acceptance at weaning and beyond.* Appetite, vol.57(3), 808–811.

Croker, H.; Sweetman, C. & Cooke, L. (2009) *Mothers' views on portion sizes for children.* Journal of Human Nutrition and Dietetics, vol. 22(5):437-43. doi: 10.1111/j.1365-277X.2009.00969.x.

De Decker, A.; Sioen, I.; Verbeken, S.; Braet, C.; Michels, N. & De Henauw, S. (2016) *Associations of reward sensitivity with food consumption, activity pattern, and BMI in children.* Appetite, vol. 100:189-96. doi: 10.1016/j.appet.2016.02.028.

Farrow, C.V.; Haycraft, E. & Blissett, J.M. (2015). *Teaching our children when to*

eat: how parental feeding practices inform the development of emotional eating--a longitudinal experimental design. The American Journal of Clinical Nutrition, vol.101(5):908-13. doi: 10.3945/ajcn.114.103713.

Fildes, A.; Van Jaarsveld, C.H.; Llewellyn, C.; Wardle, J. & Fisher, A. (2015) *Parental control over feeding in infancy. Influence of infant weight, appetite and feeding method.* Appetite, vol. 91:101-6. doi: 10.1016/j.appet.2015.04.004.

Fischer, J.O. (2007) *Effects of age on children's intake of large and self-selected food portions.* Obesity (Silver Spring), vol. 15(2):403-12.

Fischer, J.O.; Arreola, A.; Birch, L.L. & Rolls, B.J. (2007) *Portion size effects on daily energy intake in low-income Hispanic and African American children and their mothers.* The American Journal of Clinic Nutrition, vol. 86(6):1709-16.

Hendrie, G.; Sohonpal, G; Lange, K. & Golley, R. (2013) *Change in the family food environment is associated with positive dietary change in children.* The International Journal of Behavioral Nutrition and Physical Activity, vol. 7;10:4. doi: 10.1186/1479-5868-10-4.

Hendy, H.M.; Williams, K.E.; Camise, T.S.; Eckman, N. & Hedemann, A. (2009) *The Parent Mealtime Action Scale (PMAS). Development and Association with Children's Diet and Weight.* Appetite, vol. 52(2):328-39. doi: 10.1016/j.appet.2008.11.003.

Hoffman, M. (1975). *Moral Internalization, parental power, and the nature of parent-child interaction.* Developmental Psychology, 11, 228-239.

Hoffman, M. (1979). *Development of moral thought, feeling and behavior.* American Psychologist, 34, 959-966.

Holowko, N.; Jones, M.; Koupil, I.; Tooth, L & Mishra, G. (2016). *High education and increased parity are associated with breast-feeding initiation and duration among Australian women.* Public Health Nutrition. vol. 21:1-11. [Epub ahead of print]

Jansen, P.W.; Roza, S.J.; Jaddoe, V.W.; Mackenbach, J.D.; Raat, H.; Hofman, A.; Verhulst, F.C. & Tiemeier, H. (2012) *Children's eating behavior, feeding practices of parents and weight problems in early childhood: results from the population-based Generation R Study.* The International Journal of Behavioral Nutrition and Physical Activity, vol. 30;9:130. doi: 10.1186/1479-5868-9-130.

Johnson, S.L.; Goodell, L.S.; Williams, K.; Power, T.G. & Hughes, S.O. (2015) *Getting my child to eat the right amount. Mothers' considerations when deciding how much food to offer their child at a meal.* Appetite, 88:24-32. doi: 10.1016/j.appet.2014.12.004.

Kachani, A. T.; Abreu, C.L.M.; Lisboa, S.B.H. & Fisberg, M. (2005) *Selective nourishment of the child.* [in Portuguese] Review and Essay, vol.27(1):48–60.

Kiefner-Burmeister, A.E.; Hoffmann, D.A.; Meers, M.R.; Koball, A.M. & Musher-Eizenman, D.R. (2014). *Food consumption by young children: a function of parental feeding goals and practices.* Appetite, vol. 74:6-11. doi: 10.1016/j.appet.2013.11.011.

Kral, T.V.E.; Rauth, E.M. (2010) *Eating behaviors of children in the context of their Family environment.* Physiology & Behavior, vol.14;100(5):567-73. doi: 10.1016/j.physbeh.2010.04.031.

Kröller, K.; Jahnke, D.; Warschburger, P. (2013) *Are maternal weight, eating*

and feeding practices associated with emotional eating in childhood? Appetite, vol. 65:25-30. doi: 10.1016/j.appet.2012.11.032.

Levandowski, D. C.; Piccinini, C.A. & Lopes, R.C.S. (2008) *Adolescent motherhood.* [in Portuguese] Estudos de Psicologia. PUCCAMP, vol.25(2)251-263.

Mayer, A.P.F.; Weber, L.N.D. & Ton, C.T. (2014) *Children's perception about parental educative and feeding practices: a cluster analysis.* [in Portuguese] Psicologia, Saúde & Doenças, vol.15 no.3 Lisboa. http://dx.doi.org/10.15309/14psd150310.

Mazarello Paes, V.; Ong, K.K.; Lakshman, R. (2015) *Factors influencing obesogenic dietary intake in young children (0-6 years): systematic review of qualitative evidence.* BMJ Open, vol.16;5(9):e007396. doi: 10.1136/bmjopen-2014-007396.

McNally, J.; Hugh-Jones, S.; Caton, S.; Vereijken, C.; Weenen, H. & Hetherington, M. (2015) *Communicating hunger and satiation in the first 2 years of life: a systematic review.* Maternal & Child Nutrition, vol. 12(2):205-28. doi: 10.1111/mcn.12230.

Mennella, J.A.; Jagnow, C. P. & Beauchamp, G.K. (2001) *Prenatal and Postnatal Flavor Learning by Human Infants.* Pediatrics, vol.107(6).

Michaelsen, K.F.; Larnkjaer, A.; Lauritzen, L. & Mølgaard, C. (2010) *Science base of complementary feeding practice in infancy.* Current Opinion in Clinical Nutrition and Metabolic Care, v. 13, n. 3, p. 277-83.

Monteiro, C.A.; Cannon, G.; Moubarac, J.C.; Martins, A.P.; Martins, C.A.; Garzillo, J.; Canella, D.S.; Baraldi, L.G.; Barciotte, M.; Louzada, M.L.; Levy, R.B.; Claro, R.M. & Jaime, P.C. (2015) *Dietary guidelines to nourish humanity and the planet in the twenty-first century. A blueprint from Brazil.* Public Health Nutrition, vol. 18(13):2311-22. doi: 10.1017/S1368980015002165.

Monteiro, C.A.; Levy, R.B.; Claro, R.M.; de Castro, I.R. & Cannon, G. (2011) *Increasing consumption of ultra-processed foods and likely impact on human health: evidence from Brazil.* Public Health Nutrition, vol. 14(1):5-13. doi: 10.1017/S1368980010003241.

Moura, S.M.S.R.; Araújo, M.F. (2004) *The maternity in history and the history of the maternal care* [in Portuguese] Psicologia Ciência e Profissão, vol.24 (1), p.44-55.

Nicklaus, S., (2015) *The role of food experiences during early childhood in food pleasure learning.* Appetite. pii: S0195-6663(15)00388-8. doi: 10.1016/j.appet.2015.08.022.

Raaijmakers, L.G.; Gevers, D.W.; Teuscher, D.; Kremers, S.P. & Van Assema, P. (2014). *Emotional and instrumental feeding practices of Dutch mothers regarding foods eaten between main meals.* BMC Public Health. 2014 Feb 17;14:171. doi: 10.1186/1471-2458-14-171.

Rauber F.; da Costa Louzada, M.L.; Feldens, C.A. & Vitolo, M.R. (2013). *Maternal and family characteristics associated with the Healthy Eating Index among low socioeconomic status Brazilian children.* Journal of Human Nutrition and Dietetics, vol.26(4):369-79. doi: 10.1111/jhn.12005.

Ramos, C.V.; Almeida, J.A.G. (2003) *Maternal allegations for weaning: qualitative study.* Jornal de Pediatria (Rio J) vol.79(5), p.385-90.

Ribas Jr., R. C.; Seidl de Moura, M.L; Bornstein, M.H. (2007). *Mothers'*

cognitions about mothering and humandevelopment: a contribution to the study of parentalpsychology. Revista Brasileira de Crescimento e Desenvolvimento Humano, vol.17 n.1 São Paulo.

Scaglioni, S.; Salvioni, M.; Galimberti, C. (2008) *Influence of parental atitudes in the development of children eating behavior.* British Journal of Nutrition, vol. 99, Suppl. 1, S22-S25.

Schwartz, C.; Scholtens, P.A.; Lalanne, A.; Weenen, H. & Nicklaus, S. (2011) *Development of healthy eating habits early in life. Review of recente evidence and selected guidelines.* Appetite, vol.57(3):796-807. doi: 10.1016/j.appet.2011.05.316.

Seay, D.M.; Jahromi, L.B.; Umaña-Taylor, A.J. & Updegraff, K.A. *Intergenerational Transmission of Maladaptive Parenting Strategies in Families of Adolescent Mothers: Effects from Grandmothers to Young Children.* Journal of Abnormal Child Psychol. 2015 Nov 2. [Epub ahead of print]

Sherry, B.; McDivitt, J.; Birch, L.L.; Cook, F.H.; Sanders, S.; Prish, J.L.; Francis, L.A. & Scanlon, K.S. (2000) *Attitudes, practices, and concerns about child feeding and child weight status among socioeconomically diverse white, Hispanic, and African-American mothers.* Journal of the American Dietetic Association, vol. 104(2):215-21.

Tudge J. R. H., Hogan, D. M., Snezhkova, I. A., Kulakova, N. N. & Etz, K. E. (2000). *Parents' child-rearing values and beliefs in the United States and Russia: The impact of culture and social class.* Infant and Child Development, 9, 105-121.

Tung, H.J.; Yeh, M.C. (2014) *Parenting style and child-feeding behaviour in predicting children's weight status change in Taiwan.* Public Health Nutrition, vol. 17(5):970-8. doi: 10.1017/S1368980012005502.

Ventura, A. K., & Birch, L. L. (2008). *Does parenting affect children´s eating and weight status?* Journal of Behavioral Nutrition and Physical Activity, vol.5, 5-15. doi:10.1186/14795868-5-15.

Ventura, A.K.; Worobey, J. (2013) *Early Influences on the development of food preferences.* Current Biology, vol.6;23(9):R401-8. doi: 10.1016/j.cub.2013.02.037.

Vitolo, M.R.; Louzada, M.L.C., Rauber, F. (2014) *Positive impact of child feeding training program for primary care health professionals: a cluster randomized field trial.* Revista Brasileira de Epidemiologia, vol. 17(4), p. 873-886.

Chart 1: Descriptions of the strategies used by mothers to ensure their children's food consumption.

Type of Strategy	Description
Information Strategies	
Inductive Strategies	
Insistence	Offering the food repeatedly, pressuring the child to consume the amount desired by the mother or even to consume different types of offered foods.
Incentive	Using a verbal resource to encourage the child to eat more foods, such as telling stories, associating foods with appealing characteristics (e.g. strength, beauty, intelligence, cleverness) or children's characters (e.g. princesses, Barbie, the Hulk, Shrek, etc.).
Masking Foods	Using a resource to encourage the consumption of foods that are less accepted by children, including hiding the food among other foods, placing it under other foods on a spoon, cooking it until it disintegrates, beating, liquifying, straining it or even creating specific recipes (e.g. cakes, pies, stews).
Distraction	Using resources to prevent the child from noticing the amount or type of food offered. Generally included in this category are situations in which mothers offer meals in front of the TV, in a place other than at the table (such as where the child plays) or in the presence of other children.
Control by the Child Him/Herself	The mother gives the child permission to determine his/her own food consumption in terms of accepting the meal offered or not, or being able to replace it with another food. This strategy is different from the non-use of a strategy. In the second case, the mother respects the child's hunger-satiety mechanism and does not replace foods or complete meals with other foods. In this category, it was considered essential that the child eat, no matter what type of food was consumed (whether the food that was initially offered or another food requested by the child).
Trading Strategies	
Coercitive Strategies	
Punishment	Use of verbal or physical punishment, either mild or violent, such as scolding or physical aggression, as a way to stimulate the food consumption desired by the mother for the child. Used in cases of non-consumption or consumption considered to be insufficient by the mother.
Reward Strategies	
Rewards	Using a resource (generally material) to stimulate consumption of food, or a greater amount or variety of foods. Ranged from offering other foods (usually of low nutritional value) or money to giving permission to watch TV/cartoons, play video games, play special games and go on trips.

Table 1: Socio-demographic characteristics of the sample (n=463)

Characteristics	**n**	**%**
Mother's age		
< 20 years	84	18.1
>= 20 years	379	81.9
Marital Status		
Does not have a partner	105	22.7
Has a partner	358	77.3
Mother's occupation		
Unpaid	304	65.7
Paid	159	34.3
Parity		
Primiparous	203	43.8
Multiparous	260	56.3
Mother's schooling		
<= 8 years	216	46.7
> 8 years	247	53.3
Family Income		
<= 2 Brazilian minimum wages*	209	46.7
> 2 Brazilian minimum wages*	239	53.3

* 1 Brazilian minimum wage corresponds an amount to approximately U$125.00 for month at the time of data collection.

Table 2: Strategies used by mothers to stimulate their children's food consumption (n=271)

Type of Strategy Used	n	%
Information Strategies	**187**	**69**
Inductive Strategies	187	69
Incentives	99	36.5
Control by the Child Him/Herself	63	23.2
Insistence	38	14
Distraction	13	4.8
Masking of Foods	11	4.1
Trading Strategies	**117**	**43.2**
Coercitive Strategies	76	28
Punishment	76	28
Reward Strategies	46	17
Rewards	46	17

Table 3: Association between the use of trading strategies and maternal and family characteristics (n=271)

	Use of Trading Strategies (n=117 43.2%)		Univariate Poisson Regression			Multivariate Poisson Regression		
	N	%	PR	CI 95%	P value	PR	CI 95%	P value
Age								
<20 years	30	56.6	0.509	0.277 – 0.934	0.041	1.373	1.033-1.825	0.029
>= 20 years	87	39.9						
Schooling								
<8 years	62	50.4	0.582	0.358 – 0.946	0.039	1.322	1.006-1.737	0.045
>= 8 years	55	37.2						
Marital Status								
Does not have partner	31	51.7	0.644	0.362 – 1.145	0.175	1.070	0.767-1.493	0.689*
Has partner	86	40.8						
Mother's Occupation								
No formal employment	77	44.5	0.860	0.520 – 1.421	0.644	-	-	-
Formal employment	40	40.8						
Family Income*								
<2 Brazilian minimum wages[¥]	58	47.5	0.680	0.415 – 1.114	0.159	1.168	0.877-1.557	0.289*
>=2 Brazilian minimum wages[§]	53	38.1						
Parity								
Primiparous	61	47.3	0.726	0.448 – 1.176	0.238	-	-	-
Multiparous	56	39.4						

* excluded from the final model

[¥]1 Brazilian minimum wage corresponds an amount to approximately U$125.00 for month at the time of data collection.

5. CONCLUSÕES E CONSIDERAÇÕES FINAIS

Os resultados analisados durante a execução da presente Tese tornaram possível observar que os comportamentos maternos adotados para si e para seu filho nos primeiros anos de vida, com relação a alimentação, são baseados em suas crenças e nas percepções que possuem sobre esta temática. No que diz respeito à sua percepção sobre as práticas alimentares, demonstrou-se que a percepção materna difere quando relacionada à sua alimentação ou de seu filho, sendo notável que existem barreiras ou dificuldades em identificar alguns aspectos, principalmente sobre a alimentação que oferecem ao filho. Assim como se sabe que as percepções influenciam diretamente os comportamentos, pensa-se que estes achados irão auxiliar na compreensão dos padrões alimentares adotados pelas mães.

Ainda sobre os comportamentos adotados pelas mães para os seus filhos, a compreensão de que a utilização de estratégias visando o consumo alimentar infantil é bastante prevalente, independente da intenção ou percepção materna sobre as mesmas, é importante para entender a dinâmica envolvida na relação mãe x criança no momento da alimentação. Além disso, o fato de características maternas, como a idade e a escolaridade terem sido associadas a diferentes estratégias maternas, nos permite avançar no sentido deste conhecimento. Estes achados indicam a necessidade de políticas públicas que considerem as crenças e atitudes maternas no momento das intervenções nutricionais voltadas ao público infantil, principalmente pelo grande impacto que a alimentação possui nos desfechos em saúde ainda na infância e ao longo da vida dos indivíduos.

6. ANEXOS

6.1 Normas para Submissão do Periódico *Psicologia: Teoria e Pesquisa*

Tipos de Colaboração Aceita pela Revista

A Revista Psicologia: Teoria e Pesquisa publica artigos originais relacionados ás diversas áreas da Psicologia e adota as normas de publicação da Sexta Edição do Manual de Publicação da *American Psychological Association* (APA, 2010). Os autores interessados em submeter manuscritos a Psicologia: Teoria e Pesquisa devem seguir rigorosamente as normas descritas no manual da APA.

No concernente aos tipos de contribuição, conforme as normas da APA, a Psicologia: Teoria e Pesquisa aceita manuscritos que se enquadrem nas seguintes categorias:

1. **Estudos Empíricos:** Trata-se de relatos de pesquisa original com fontes de dados primários ou secundários. Sua estrutura típica consiste em diferentes seções que refletem os estágios do processo de investigação e que aparecem na seguinte ordem: introdução (desenvolvimento do problema com revisão da literatura empírica concernente ao problema e apresentação dos propósitos de investigação); método (descrição dos participantes/sujeitos, instrumentos, materiais/equipamentos e procedimentos utilizados para condução da pesquisa); resultados (relato dos achados e análises); e discussão (sumário, interpretação e implicações dos resultados). Este tipo de contribuição está limitado a 30 páginas, incluindo resumo, abstract, figuras, tabelas e referências. O resumo e o *abstract* devem ter, cada um, no máximo 120 palavras.
2. **Revisão da Literatura:** Trata-se de sínteses de pesquisa ou meta-análises e consistem em avaliação crítica de material já publicado. O propósito deste tipo de contribuição é que os autores integrem e avaliem material previamente publicado, considerando o progresso da pesquisa e buscando clarificar um problema específico. É esperado que os autores: (a) definam claramente um problema; (b) sumarizem investigações prévias para informar o leitor sobre o estado da pesquisa; (c) identifiquem relações, contradições, lacunas e/ou inconsistências na literatura; e (d) sugiram próximos passos de investigação para a resolução dos problemas identificados. Não há uma estrutura de seções pré-definida para este tipo de contribuição, de forma que os autores devem buscar um formato coerente para o texto. É fundamental que haja um argumento organizador e não somente uma compilação de pesquisas já realizadas. Este tipo de contribuição está limitado a 30 páginas incluindo resumo, *abstract*, figuras, tabelas e referências. O resumo e o abstract devem ter, cada um, no máximo 120 palavras.
3. **Artigos Teóricos:** Trata-se de trabalhos baseados na literatura empírica vigente para propor avanços teóricos. Espera-se que os autores apresentem o desenvolvimento de uma teoria para expandir ou refinar construtos teóricos, apresentem uma nova teoria ou analisem uma teoria existente, apresentando suas fraquezas ou demonstrem a vantagem de uma teoria sobre outra. Usualmente os autores de contribuições desta natureza analisam a consistência interna de uma teoria, bem como sua validade externa. As seções podem variar como forma de busca de consistência. É fundamental que haja um elemento propositivo no texto. Este tipo de contribuição está limitado a 30 páginas, incluindo resumo, abstract, figuras, tabelas e referências. O resumo e o abstract devem ter, cada um, no máximo 120 palavras.

4. **Artigos Metodológicos:** Trata-se da apresentação de novas abordagens metodológicas, modificação de métodos existentes ou discussões sobre abordagens analíticas de dados para a comunidade científica. O uso de dados empíricos, neste caso, serve unicamente como ilustração da técnica de análise de dados. Este tipo de contribuição está limitado a 21 páginas, incluindo resumo, abstract, figuras, tabelas e referências. O resumo e o abstract devem ter, cada um, no máximo 120 palavras.

A critério do editor também serão apreciadas para publicação as seguintes categorias de contribuições:

5. **Relato de Experiência Profissional:** Estudo de caso, contendo análise de implicações conceituais, ou descrição de procedimentos ou estratégias de intervenção, contendo evidência metodologicamente apropriada de avaliação de eficácia, de interesse para a atuação de psicólogos em diferentes áreas. Este tipo de contribuição está limitado a 21 páginas incluindo resumo, abstract, figuras, tabelas e referências. O resumo e o abstract devem ter, cada um, no máximo 80 palavras.

6. **Comunicação Breve:** Relato de pesquisa sucinto, mas completo, de uma investigação específica (ver modelo geral definido para estudos empíricos). Este tipo de contribuição está limitado a 12 páginas incluindo resumo, abstract, figuras, tabelas e referências. O resumo e o abstract devem ter, cada um, no máximo 80 palavras.

7. **Carta ao Editor:** Avaliação crítica de artigo publicado em Psicologia: Teoria e Pesquisa ou resposta de autores a crítica formulada a artigo de sua autoria. Este tipo de contribuição está limitado a 6 páginas incluindo todos os seus elementos. Não há Resumo.

8. **Nota Técnica:** Descrição de instrumentos e técnicas originais de pesquisa. Este tipo de contribuição está limitado a 9 páginas, incluindo resumo, abstract, figuras, tabelas e referências. O resumo e o abstract devem ter, cada um, no máximo 60 palavras.

9. **Resenha:** Revisão crítica de obra recém publicada, orientando o leitor quanto a suas características e usos potenciais. É fundamental que não se trate apenas de um sumário ou revisão dos capítulos da obra, mas efetivamente uma crítica. Este tipo de contribuição está limitado a 6 páginas incluindo todos os seus elementos. Não há Resumo.

10. **Notícia:** Divulgação de fato ou evento de conteúdo relacionado à psicologia, não sendo exigidas originalidade e exclusividade na publicação. Este tipo de contribuição está limitado a 3 páginas incluindo todos os seus elementos. Não há Resumo.

Apreciação pelo Conselho Editorial

O manuscrito que se enquadra nas categorias 1 a 10 acima descritas é aceito para análise pressupondo-se que: (a) o mesmo trabalho não foi publicado e nem está sendo submetido para publicação em outro periódico; (b) todas as pessoas listadas como autores aprovaram o seu encaminhamento com vistas à publicação na revista **Psicologia: Teoria e Pesquisa**; (c) qualquer pessoa citada como fonte de comunicação pessoal aprovou a citação; (d) os autores seguiram todos os procedimentos éticos recomendados pelos padrões adotados pela Revista.

A primeira avaliação do trabalho é realizada pela Direção de *Psicologia: Teoria e Pesquisa* e consiste na análise rigorosa da adequação do manuscrito às normas da Revista, considerando, especialmente, dois aspectos: tipo de contribuição (suas características principais, definidas neste documento e no manual da APA) e as normas de redação e formatação do manual da APA. Os manuscritos que forem considerados como não aderentes às normas terão sua tramitação interrompida e os autores informados da decisão.

Os trabalhos que atenderem às normas serão enviados para apreciação do Conselho Editorial, que poderá fazer uso de consultores*ad hoc* a seu critério. Os autores serão notificados da aceitação ou recusa de seus manuscritos.

Os trabalhos que atenderem às normas serão enviados e apreciados pelo Conselho Editorial, que poderá fazer uso de consultores*ad hoc* a seu critério.

Os autores serão notificados da aceitação ou recusa de seus manuscritos. Pequenas modificações no texto poderão ser feitas pela Direção ou pelo Conselho Editorial da Revista. Quando este julgar necessárias modificações substanciais, o autor será notificado e encarregado de fazê-las, devolvendo o trabalho reformulado no prazo estipulado.

Direitos Autorais

1. Artigos publicados em Psicologia: Teoria e Pesquisa

Os direitos autorais dos artigos publicados pertencem à Revista **Psicologia: Teoria e Pesquisa**. A reprodução total dos artigos desta Revista em outras publicações, ou para qualquer outra utilidade, está condicionada à autorização escrita do Editor de**Psicologia: Teoria e Pesquisa**. Pessoas interessadas em reproduzir parcialmente os artigos desta Revista (partes do texto que excederem 500 palavras, tabelas, figuras e outras ilustrações) deverão ter permissão escrita do(s) autor(es).

No caso de aceite para publicação de um manuscrito a Revista enviará aos autores carta de cessão de direitos de publicação que deverá ser devolvida assinada em formato digital.

2. Reprodução parcial de outras publicações

Manuscritos submetidos que contiverem partes de texto extraídas de outras publicações deverão obedecer aos limites especificados para garantir originalidade do trabalho submetido. O manuscrito que contiver reprodução de uma ou mais figuras, tabelas, desenhos e instrumentos extraídos de outras publicações só será encaminhado para análise se vier acompanhado de permissão escrita do detentor do direito autoral do trabalho original para a reprodução especificada em **Psicologia: Teoria e Pesquisa**. A permissão deve ser endereçada ao autor do trabalho submetido. Em nenhuma circunstância **Psicologia: Teoria e Pesquisa** e os autores dos trabalhos publicados nesta Revista repassarão direitos assim obtidos.

Normas para publicação

Forma de Apresentação dos Manuscritos

Psicologia: Teoria e Pesquisa adota integralmente as normas de publicação do *Publication Manual of the American Psychological Association* (6a edição, 2010). Os manuscritos devem ser redigidos em português, inglês ou espanhol ou, ainda, em outra língua a critério do conselho editorial.

A submissão dos manuscritos deve ser feita unicamente de forma eletrônica por meio da plataforma SEER de *Psicologia: Teoria e Pesquisa* no seguinte endereço: www.revistaptp.unb.br.

No momento da submissão os autores deverão realizar o *upload* no sistema da revista de dois arquivos no formato do processador de texto WORD 2003 ou posterior. O primeiro é o manuscrito propriamente dito, sem nenhum tipo de identificação dos autores e contendo todos os seus elementos, a saber: título, título abreviado para cabeçalho, resumo (se redigido em português. Resumo e *résumen* se redigido em espanhol), *abstract*, texto propriamente dito, referências, tabelas (uma por página) e figuras (uma por página). O segundo arquivo é uma carta de encaminhamento (*cover letter*) que deverá conter todos os elementos pertinentes indicados no manual da APA, assinada por todos os autores do manuscrito. Apenas devem ser enviados arquivos suplementares se estritamente essenciais para a avaliação do manuscrito.

A apresentação de informações numéricas e estatísticas deverá seguir o preconizado no manual da APA. Para os manuscritos redigidos em língua portuguesa solicita-se a normalização das informações numéricas e estatísticas conforme recomendações de Carzola, Silva e Vendramini (2009), que pode ser acessado gratuitamente no seguinte endereço eletrônico:http://www.ip.usp.br/portal/images/stories/biblioteca/Publicar-em-Psicologia.pdf

Ressalva-se que, no caso de artigos redigidos em língua portuguesa, eventuais inconsistências entre os padrões do manual da APA e a redação em língua portuguesa devem ser resolvidas pelos autores considerando-se as regras gerais de redação desta língua.

A formatação do arquivo do manuscrito bem como a elaboração de tabelas, figuras e demais elementos deverão seguir rigorosamente o que está preconizado no manual da APA. Recomenda-se que os autores, antes da submissão, avaliem se o manuscrito está em acordo com check-list apresentado nas páginas 241-243 do manual da APA. Ressalta-se que esses elementos podem constituir motivo de rejeição sumária do manuscrito pela Direção da Revista caso não sejam cumpridos conforme as normas especificadas.

Como fonte complementar aos autores recomenda-se a consulta à informação on-line sobre o manual de publicação da APA nos seguintes endereços:
http://www.apastyle.org/
http://owl.english.purdue.edu/owl/section/2/10/

Referências

APA. (2010). *Publication manual of the American Psychological Association*. Washington, DC: APA.

Carzola, I. M., Silva, C. B. da, & Vendramini, C. M. M. (2009). Normas para a apresentação de informações estatísticas no estilo editorial APA. In A. A. Z. P. Sabadini, M. I. C. Sampaio, & S. H. Koller (Eds.), *Publicar em psicologia: Um enfoque para a revista científica* (pp. 171-188). São Paulo: Associação Brasileira de Editores Científicos de Psicologia; Instituto de Psicologia da Universidade de São Paulo. Retirado de http://www.ip.usp.br/portal/images/stories/biblioteca/Publicar-em-Psicologia.pdf

6.2 Normas para Submissão do Periódico *Acta Psychologica*

Your Paper Your Way
We now differentiate between the requirements for new and revised submissions. You may choose to submit your manuscript as a single Word or PDF file to be used in the refereeing process. Only when your paper is at the revision stage, will you be requested to put your paper in to a 'correct format' for acceptance and provide the items required for the publication of your article.
To find out more, please visit the Preparation section below.
Types of contribution
Acta Psychologica publishes original articles and extended reviews on selected books in any area of experimental psychology. The focus of the Journal is on empirical studies and evaluative review articles that increase the theoretical understanding of human capabilities. The majority of papers deal with human performance, attention, perception, memory, and decision-making but papers concerned with social processes, development, psychopathology, neuroscience or computational modelling are also welcome provided that they are of direct importance to experimental psychologists and are written so as to be understandable to such a readership.
Ethics in publishing

Please see our information pages on Ethics in publishing and Ethical guidelines for journal publication.
Human and animal rights

If the work involves the use of human subjects, the author should ensure that the work described has been carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki) for experiments involving humans; Uniform Requirements for manuscripts submitted to Biomedical journals. Authors should include a statement in the manuscript that informed consent was obtained for experimentation with human subjects. The privacy rights of human subjects must always be observed.
All animal experiments should comply with the ARRIVE guidelines and should be carried out in accordance with the U.K. Animals (Scientific Procedures) Act, 1986 and associated guidelines, EU Directive 2010/63/EU for animal experiments, or the National Institutes of Health guide for the care and use of Laboratory animals (NIH Publications No. 8023, revised 1978) and the authors should clearly indicate in the manuscript that such guidelines have been followed.
Declaration of interest

All authors are requested to disclose any actual or potential conflict of interest including any financial, personal or other relationships with other people or organizations within three years of beginning the submitted work that could inappropriately influence, or be perceived to influence, their work. More information.
Submission declaration and verification

Submission of an article implies that the work described has not been published previously (except in the form of an abstract or as part of a published lecture or academic thesis or as an electronic preprint, see 'Multiple, redundant or concurrent publication' section of our ethics policy for more information), that it is not under consideration for publication elsewhere, that its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out, and that, if accepted, it will not be published elsewhere in the same form, in English or in any other language, including electronically without the written consent of the copyright-holder. To verify originality, your article may be checked by the originality detection service CrossCheck.
Changes to authorship

Authors are expected to consider carefully the list and order of authors **before**submitting their manuscript and provide the definitive list of authors at the time of the original submission. Any addition, deletion or rearrangement of author names in the authorship list should be made

only **before** the manuscript has been accepted and only if approved by the journal Editor. To request such a change, the Editor must receive the following from the **corresponding author**: (a) the reason for the change in author list and (b) written confirmation (e-mail, letter) from all authors that they agree with the addition, removal or rearrangement. In the case of addition or removal of authors, this includes confirmation from the author being added or removed.
Only in exceptional circumstances will the Editor consider the addition, deletion or rearrangement of authors **after** the manuscript has been accepted. While the Editor considers the request, publication of the manuscript will be suspended. If the manuscript has already been published in an online issue, any requests approved by the Editor will result in a corrigendum.

Copyright

Upon acceptance of an article, authors will be asked to complete a 'Journal Publishing Agreement' (see more information on this). An e-mail will be sent to the corresponding author confirming receipt of the manuscript together with a 'Journal Publishing Agreement' form or a link to the online version of this agreement.
Subscribers may reproduce tables of contents or prepare lists of articles including abstracts for internal circulation within their institutions. Permission of the Publisher is required for resale or distribution outside the institution and for all other derivative works, including compilations and translations. If excerpts from other copyrighted works are included, the author(s) must obtain written permission from the copyright owners and credit the source(s) in the article. Elsevier has preprinted forms for use by authors in these cases.
For open access articles: Upon acceptance of an article, authors will be asked to complete an 'Exclusive License Agreement' (more information). Permitted third party reuse of open access articles is determined by the author's choice of user license.

Author rights

As an author you (or your employer or institution) have certain rights to reuse your work. More information.

Role of the funding source

You are requested to identify who provided financial support for the conduct of the research and/or preparation of the article and to briefly describe the role of the sponsor(s), if any, in study design; in the collection, analysis and interpretation of data; in the writing of the report; and in the decision to submit the article for publication. If the funding source(s) had no such involvement then this should be stated.

Funding body agreements and policies

Elsevier has established a number of agreements with funding bodies which allow authors to comply with their funder's open access policies. Some funding bodies will reimburse the author for the Open Access Publication Fee. Details of existing agreements are available online.

Open access

This journal offers authors a choice in publishing their research:

Open access

• Articles are freely available to both subscribers and the wider public with permitted reuse.
• An open access publication fee is payable by authors or on their behalf, e.g. by their research funder or institution.

Subscription

• Articles are made available to subscribers as well as developing countries and patient groups through our universal access programs.
• No open access publication fee payable by authors.

Regardless of how you choose to publish your article, the journal will apply the same peer review criteria and acceptance standards.
For open access articles, permitted third party (re)use is defined by the following Creative Commons user licenses:

Creative Commons Attribution (CC BY)

Lets others distribute and copy the article, create extracts, abstracts, and other revised versions, adaptations or derivative works of or from an article (such as a translation), include in a collective work (such as an anthology), text or data mine the article, even for commercial purposes, as long as they credit the author(s), do not represent the author as endorsing their adaptation of the article, and do not modify the article in such a way as to damage the author's honor or reputation.

Creative Commons Attribution-NonCommercial-NoDerivs (CC BY-NC-ND)
For non-commercial purposes, lets others distribute and copy the article, and to include in a collective work (such as an anthology), as long as they credit the author(s) and provided they do not alter or modify the article.

The open access publication fee for this journal is **USD 1800**, excluding taxes. Learn more about Elsevier's pricing policy:http://www.elsevier.com/openaccesspricing.

Green open access
Authors can share their research in a variety of different ways and Elsevier has a number of green open access options available. We recommend authors see ourgreen open access page for further information. Authors can also self-archive their manuscripts immediately and enable public access from their institution's repository after an embargo period. This is the version that has been accepted for publication and which typically includes author-incorporated changes suggested during submission, peer review and in editor-author communications. Embargo period: For subscription articles, an appropriate amount of time is needed for journals to deliver value to subscribing customers before an article becomes freely available to the public. This is the embargo period and it begins from the date the article is formally published online in its final and fully citable form.

This journal has an embargo period of 24 months.

Elsevier Publishing Campus
The Elsevier Publishing Campus (www.publishingcampus.com) is an online platform offering free lectures, interactive training and professional advice to support you in publishing your research. The College of Skills training offers modules on how to prepare, write and structure your article and explains how editors will look at your paper when it is submitted for publication. Use these resources, and more, to ensure that your submission will be the best that you can make it.

Language (usage and editing services)
Please write your text in good English (American or British usage is accepted, but not a mixture of these). Authors who feel their English language manuscript may require editing to eliminate possible grammatical or spelling errors and to conform to correct scientific English may wish to use the English Language Editing service available from Elsevier's WebShop.

Submission

Our online submission system guides you stepwise through the process of entering your article details and uploading your files. The system converts your article files to a single PDF file used in the peer-review process. Editable files (e.g., Word, LaTeX) are required to typeset your article for final publication. All correspondence, including notification of the Editor's decision and requests for revision, is sent by e-mail.

Submit your article
Please submit your article via http://ees.elsevier.com/actpsy

NEW SUBMISSIONS

Submission to this journal proceeds totally online and you will be guided stepwise through the creation and uploading of your files. The system automatically converts your files to a single PDF file, which is used in the peer-review process.
As part of the Your Paper Your Way service, you may choose to submit your manuscript as a single file to be used in the refereeing process. This can be a PDF file or a Word document, in any format or lay-out that can be used by referees to evaluate your manuscript. It should contain high enough quality figures for refereeing. If you prefer to do so, you may still provide all or some of the source files at the initial submission. Please note that individual figure files larger than 10 MB must be uploaded separately.

References
There are no strict requirements on reference formatting at submission. References can be in any style or format as long as the style is consistent. Where applicable, author(s) name(s), journal title/book title, chapter title/article title, year of publication, volume number/book chapter and the pagination must be present. Use of DOI is highly encouraged. The reference style used by the journal will be applied to the accepted article by Elsevier at the proof stage. Note that missing data will be highlighted at proof stage for the author to correct.

Formatting requirements

There are no strict formatting requirements but all manuscripts must contain the essential elements needed to convey your manuscript, for example Abstract, Keywords, Introduction, Materials and Methods, Results, Conclusions, Artwork and Tables with Captions. If your article includes any Videos and/or other Supplementary material, this should be included in your initial submission for peer review purposes. Divide the article into clearly defined sections.

Figures and tables embedded in text

Please ensure the figures and the tables included in the single file are placed next to the relevant text in the manuscript, rather than at the bottom or the top of the file.

REVISED SUBMISSIONS

Use of word processing software

Regardless of the file format of the original submission, at revision you must provide us with an editable file of the entire article. Keep the layout of the text as simple as possible. Most formatting codes will be removed and replaced on processing the article. The electronic text should be prepared in a way very similar to that of conventional manuscripts (see also the Guide to Publishing with Elsevier). See also the section on Electronic artwork.

To avoid unnecessary errors you are strongly advised to use the 'spell-check' and 'grammar-check' functions of your word processor.

Article structure

Subdivision - numbered sections

Divide your article into clearly defined and numbered sections. Subsections should be numbered 1.1 (then 1.1.1, 1.1.2, ...), 1.2, etc. (the abstract is not included in section numbering). Use this numbering also for internal cross-referencing: do not just refer to 'the text'. Any subsection may be given a brief heading. Each heading should appear on its own separate line.

Introduction

State the objectives of the work and provide an adequate background, avoiding a detailed literature survey or a summary of the results.

Conclusions

The main conclusions of the study may be presented in a short Conclusions section, which may stand alone or form a subsection of a Discussion or Results and Discussion section.

Appendices

If there is more than one appendix, they should be identified as A, B, etc. Formulae and equations in appendices should be given separate numbering: Eq. (A.1), Eq. (A.2), etc.; in a subsequent appendix, Eq. (B.1) and so on. Similarly for tables and figures: Table A.1; Fig. A.1, etc.

Essential title page information

• ***Title.*** Concise and informative. Titles are often used in information-retrieval systems. Avoid abbreviations and formulae where possible.

• ***Author names and affiliations.*** Please clearly indicate the given name(s) and family name(s) of each author and check that all names are accurately spelled. Present the authors' affiliation addresses (where the actual work was done) below the names. Indicate all affiliations with a lower-case superscript letter immediately after the author's name and in front of the appropriate address. Provide the full postal address of each affiliation, including the country name and, if available, the e-mail address of each author.

• ***Corresponding author.*** Clearly indicate who will handle correspondence at all stages of refereeing and publication, also post-publication. **Ensure that the e-mail address is given and that contact details are kept up to date by the corresponding author.**

• ***Present/permanent address.*** If an author has moved since the work described in the article was done, or was visiting at the time, a 'Present address' (or 'Permanent address') may be indicated as a footnote to that author's name. The address at which the author actually did the work must be retained as the main, affiliation address. Superscript Arabic numerals are used for such footnotes.

Abstract

A concise and factual abstract is required. The abstract should state briefly the purpose of the research, the principal results and major conclusions. An abstract is often presented separately from the article, so it must be able to stand alone. For this reason, References should be avoided, but if essential, then cite the author(s) and year(s). Also, non-standard or uncommon

abbreviations should be avoided, but if essential they must be defined at their first mention in the abstract itself.

Graphical abstract

Although a graphical abstract is optional, its use is encouraged as it draws more attention to the online article. The graphical abstract should summarize the contents of the article in a concise, pictorial form designed to capture the attention of a wide readership. Graphical abstracts should be submitted as a separate file in the online submission system. Image size: Please provide an image with a minimum of 531 × 1328 pixels (h × w) or proportionally more. The image should be readable at a size of 5 × 13 cm using a regular screen resolution of 96 dpi. Preferred file types: TIFF, EPS, PDF or MS Office files. You can view Example Graphical Abstracts on our information site.

Authors can make use of Elsevier's Illustration and Enhancement service to ensure the best presentation of their images and in accordance with all technical requirements: Illustration Service.

Highlights

Highlights are mandatory for this journal. They consist of a short collection of bullet points that convey the core findings of the article and should be submitted in a separate editable file in the online submission system. Please use 'Highlights' in the file name and include 3 to 5 bullet points (maximum 85 characters, including spaces, per bullet point). You can view example Highlights on our information site.

Keywords

Immediately after the abstract, provide a maximum of 6 keywords, using American spelling and avoiding general and plural terms and multiple concepts (avoid, for example, 'and', 'of'). Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible. These keywords will be used for indexing purposes.

Classification codes

Kindly provide PsycINFO codes. See the webpage:
http://www.apa.org/pubs/databases/training/class-codes.aspx

Acknowledgements

Collate acknowledgements in a separate section at the end of the article before the references and do not, therefore, include them on the title page, as a footnote to the title or otherwise. List here those individuals who provided help during the research (e.g., providing language help, writing assistance or proof reading the article, etc.).

Formatting of funding sources

List funding sources in this standard way to facilitate compliance to funder's requirements:
Funding: This work was supported by the National Institutes of Health [grant numbers xxxx, yyyy]; the Bill & Melinda Gates Foundation, Seattle, WA [grant number zzzz]; and the United States Institutes of Peace [grant number aaaa].

It is not necessary to include detailed descriptions on the program or type of grants and awards. When funding is from a block grant or other resources available to a university, college, or other research institution, submit the name of the institute or organization that provided the funding.

If no funding has been provided for the research, please include the following sentence:
This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Footnotes

Footnotes should be used sparingly. Number them consecutively throughout the article. Many word processors build footnotes into the text, and this feature may be used. Should this not be the case, indicate the position of footnotes in the text and present the footnotes themselves separately at the end of the article.

Artwork

Electronic artwork

General points

• Make sure you use uniform lettering and sizing of your original artwork.
• Preferred fonts: Arial (or Helvetica), Times New Roman (or Times), Symbol, Courier.
• Number the illustrations according to their sequence in the text.
• Use a logical naming convention for your artwork files.
• Indicate per figure if it is a single, 1.5 or 2-column fitting image.
• For Word submissions only, you may still provide figures and their captions, and tables within a single file at the revision stage.

• Please note that individual figure files larger than 10 MB must be provided in separate source files.
A detailed guide on electronic artwork is available.
You are urged to visit this site; some excerpts from the detailed information are given here.
Formats
Regardless of the application used, when your electronic artwork is finalized, please 'save as' or convert the images to one of the following formats (note the resolution requirements for line drawings, halftones, and line/halftone combinations given below):
EPS (or PDF): Vector drawings. Embed the font or save the text as 'graphics'.
TIFF (or JPG): Color or grayscale photographs (halftones): always use a minimum of 300 dpi.
TIFF (or JPG): Bitmapped line drawings: use a minimum of 1000 dpi.
TIFF (or JPG): Combinations bitmapped line/half-tone (color or grayscale): a minimum of 500 dpi is required.
Please do not:
• Supply files that are optimized for screen use (e.g., GIF, BMP, PICT, WPG); the resolution is too low.
• Supply files that are too low in resolution.
• Submit graphics that are disproportionately large for the content.
Color artwork
Please make sure that artwork files are in an acceptable format (TIFF (or JPEG), EPS (or PDF), or MS Office files) and with the correct resolution. If, together with your accepted article, you submit usable color figures then Elsevier will ensure, at no additional charge, that these figures will appear in color online (e.g., ScienceDirect and other sites) regardless of whether or not these illustrations are reproduced in color in the printed version. **For color reproduction in print, you will receive information regarding the costs from Elsevier after receipt of your accepted article**. Please indicate your preference for color: in print or online only. Further information on the preparation of electronic artwork.
Figure captions
Ensure that each illustration has a caption. A caption should comprise a brief title (**not** on the figure itself) and a description of the illustration. Keep text in the illustrations themselves to a minimum but explain all symbols and abbreviations used.
Tables

Please submit tables as editable text and not as images. Tables can be placed either next to the relevant text in the article, or on separate page(s) at the end. Number tables consecutively in accordance with their appearance in the text and place any table notes below the table body. Be sparing in the use of tables and ensure that the data presented in them do not duplicate results described elsewhere in the article. Please avoid using vertical rules.
References
Citation in text
Please ensure that every reference cited in the text is also present in the reference list (and vice versa). Any references cited in the abstract must be given in full. Unpublished results and personal communications are not recommended in the reference list, but may be mentioned in the text. If these references are included in the reference list they should follow the standard reference style of the journal and should include a substitution of the publication date with either 'Unpublished results' or 'Personal communication'. Citation of a reference as 'in press' implies that the item has been accepted for publication.
Web references
As a minimum, the full URL should be given and the date when the reference was last accessed. Any further information, if known (DOI, author names, dates, reference to a source publication, etc.), should also be given. Web references can be listed separately (e.g., after the reference list) under a different heading if desired, or can be included in the reference list.
References in a special issue
Please ensure that the words 'this issue' are added to any references in the list (and any citations in the text) to other articles in the same Special Issue.
Reference management software
Most Elsevier journals have their reference template available in many of the most popular reference management software products. These include all products that support Citation Style Language styles, such as Mendeley and Zotero, as well as EndNote. Using the word processor

plug-ins from these products, authors only need to select the appropriate journal template when preparing their article, after which citations and bibliographies will be automatically formatted in the journal's style. If no template is yet available for this journal, please follow the format of the sample references and citations as shown in this Guide.

Users of Mendeley Desktop can easily install the reference style for this journal by clicking the following link:
http://open.mendeley.com/use-citation-style/acta-psychologica
When preparing your manuscript, you will then be able to select this style using the Mendeley plug-ins for Microsoft Word or LibreOffice.

Reference formatting

There are no strict requirements on reference formatting at submission. References can be in any style or format as long as the style is consistent. Where applicable, author(s) name(s), journal title/book title, chapter title/article title, year of publication, volume number/book chapter and the pagination must be present. Use of DOI is highly encouraged. The reference style used by the journal will be applied to the accepted article by Elsevier at the proof stage. Note that missing data will be highlighted at proof stage for the author to correct. If you do wish to format the references yourself they should be arranged according to the following examples:

Reference style

Text: Citations in the text should follow the referencing style used by the American Psychological Association. You are referred to the Publication Manual of the American Psychological Association, Sixth Edition, ISBN 978-1-4338-0561-5, copies of which may be ordered online or APA Order Dept., P.O.B. 2710, Hyattsville, MD 20784, USA or APA, 3 Henrietta Street, London, WC3E 8LU, UK.

List: references should be arranged first alphabetically and then further sorted chronologically if necessary. More than one reference from the same author(s) in the same year must be identified by the letters 'a', 'b', 'c', etc., placed after the year of publication.

Examples:

Reference to a journal publication:

Van der Geer, J., Hanraads, J. A. J., & Lupton, R. A. (2010). The art of writing a scientific article. *Journal of Scientific Communications, 163*, 51–59.

Reference to a book:

Strunk, W., Jr., & White, E. B. (2000). *The elements of style.* (4th ed.). New York: Longman, (Chapter 4).

Reference to a chapter in an edited book:

Mettam, G. R., & Adams, L. B. (2009). How to prepare an electronic version of your article. In B. S. Jones, & R. Z. Smith (Eds.), *Introduction to the electronic age* (pp. 281–304). New York: E-Publishing Inc.

Reference to a website:

Cancer Research UK. Cancer statistics reports for the UK. (2003). http://www.cancerresearchuk.org/aboutcancer/statistics/cancerstatsreport/ Accessed 13.03.03.

Video data

Elsevier accepts video material and animation sequences to support and enhance your scientific research. Authors who have video or animation files that they wish to submit with their article are strongly encouraged to include links to these within the body of the article. This can be done in the same way as a figure or table by referring to the video or animation content and noting in the body text where it should be placed. All submitted files should be properly labeled so that they directly relate to the video file's content. In order to ensure that your video or animation material is directly usable, please provide the files in one of our recommended file formats with a preferred maximum size of 150 MB. Video and animation files supplied will be published online in the electronic version of your article in Elsevier Web products, including ScienceDirect. Please supply 'stills' with your files: you can choose any frame from the video or animation or make a separate image. These will be used instead of standard icons and will personalize the link to your video data. For more detailed instructions please visit our video instruction pages. Note: since video and animation cannot be embedded in the print version of the journal, please provide text for both the electronic and the print version for the portions of the article that refer to this content.

Supplementary material

Supplementary material can support and enhance your scientific research. Supplementary files offer the author additional possibilities to publish supporting applications, high-resolution images, background datasets, sound clips and more. Please note that such items are published online exactly as they are submitted; there is no typesetting involved (supplementary data supplied as an Excel file or as a PowerPoint slide will appear as such online). Please submit the material together with the article and supply a concise and descriptive caption for each file. If you wish to make any changes to supplementary data during any stage of the process, then please make sure to provide an updated file, and do not annotate any corrections on a previous version. Please also make sure to switch off the 'Track Changes' option in any Microsoft Office files as these will appear in the published supplementary file(s). For more detailed instructions please visit our artwork instruction pages.

Data in Brief

Authors have the option of converting any or all parts of their supplementary or additional raw data into one or multiple Data in Brief articles, a new kind of article that houses and describes their data. Data in Brief articles ensure that your data, which is normally buried in supplementary material, is actively reviewed, curated, formatted, indexed, given a DOI and publicly available to all upon publication. Authors are encouraged to submit their Data in Brief article as an additional item directly alongside the revised version of their manuscript. If your research article is accepted, your Data in Brief article will automatically be transferred over to *Data in Brief* where it will be editorially reviewed and published in the new, open access journal, *Data in Brief*. Please note an open access fee is payable for publication in*Data in Brief*. Full details can be found on the Data in Brief website. Please use**AudioSlides**

The journal encourages authors to create an AudioSlides presentation with their published article. AudioSlides are brief, webinar-style presentations that are shown next to the online article on ScienceDirect. This gives authors the opportunity to summarize their research in their own words and to help readers understand what the paper is about. More information and examples are available. Authors of this journal will automatically receive an invitation e-mail to create an AudioSlides presentation after acceptance of their paper.

Interactive plots

This journal enables you to show an Interactive Plot with your article by simply submitting a data file. Full instructions.

Submission checklist

The following list will be useful during the final checking of an article prior to sending it to the journal for review. Please consult this Guide for Authors for further details of any item.

Ensure that the following items are present:

One author has been designated as the corresponding author with contact details:
• E-mail address
• Full postal address
All necessary files have been uploaded, and contain:
• Keywords
• All figure captions
• All tables (including title, description, footnotes)
Further considerations
• Manuscript has been 'spell-checked' and 'grammar-checked'
• All references mentioned in the Reference list are cited in the text, and vice versa
• Permission has been obtained for use of copyrighted material from other sources (including the Internet)
Printed version of figures (if applicable) in color or black-and-white
• Indicate clearly whether or not color or black-and-white in print is required.
For any further information please visit our Support Center.

Online proof correction

Corresponding authors will receive an e-mail with a link to our online proofing system, allowing annotation and correction of proofs online. The environment is similar to MS Word: in addition to editing text, you can also comment on figures/tables and answer questions from the Copy Editor. Web-based proofing provides a faster and less error-prone process by allowing you to

directly type your corrections, eliminating the potential introduction of errors.
If preferred, you can still choose to annotate and upload your edits on the PDF version. All instructions for proofing will be given in the e-mail we send to authors, including alternative methods to the online version and PDF.
We will do everything possible to get your article published quickly and accurately. Please use this proof only for checking the typesetting, editing, completeness and correctness of the text, tables and figures. Significant changes to the article as accepted for publication will only be considered at this stage with permission from the Editor. It is important to ensure that all corrections are sent back to us in one communication. Please check carefully before replying, as inclusion of any subsequent corrections cannot be guaranteed. Proofreading is solely your responsibility.

Offprints

The corresponding author will, at no cost, receive a customized Share Linkproviding 50 days free access to the final published version of the article onScienceDirect. The Share Link can be used for sharing the article via any communication channel, including email and social media. For an extra charge, paper offprints can be ordered via the offprint order form which is sent once the article is accepted for publication. Both corresponding and co-authors may order offprints at any time via Elsevier's Webshop. Corresponding authors who have published their article open access do not receive a Share Link as their final published version of the article is available open access on ScienceDirect and can be shared through the article DOI link.

6.3 Parecer Comitê de Ética

MINISTÉRIO DA EDUCAÇÃO
FUNDAÇÃO FACULDADE FEDERAL DE CIÊNCIAS MÉDICAS DE PORTO ALEGRE
COMITÊ DE ÉTICA EM PESQUISA
APROVADO PELA CARTA Nº 880/2004-CONEP/CNS/MS
RUA SARMENTO LEITE, 245 – FONE: (51) 3224.8822
CEP 90050-170 – PORTO ALEGRE – RS - cep@fffcmpa.edu.br

Of. 532/07-CEP

Porto Alegre, 06 de novembro de 2007.

Ilma. Sra.
Profa. Márcia Regina Vitolo
Nesta Faculdade

Senhora Professora

Informamos que seu projeto intitulado "Implementação dos Dez Passos da Alimentação Saudável para Crianças Menores de Dois Anos nas Unidades Básicas de Saúde.", Processo nº 226/07, foi aprovado por este Comitê, na reunião de 14 de junho 2007, conforme parecer consubstanciado nº 471-07.

Atenciosamente,

UFCSPA

COMISSÃO CIENTÍFICA E COMISSÃO DE PESQUISA E ÉTICA EM SAÚDE

COMITÊ DE ÉTICA EM PESQUISA - CEP
UFCSPA

O Comitê de Ética em Pesquisa da UFCSPA, registrado na Comissão Nacional de Ética em Pesquisa (CONEP) sob o nº 075/05 em 23/07/04, analisou o Projeto:

Projeto: 11-748 **Versão do Projeto:** **Versão do TCLE:**

Pesquisadores:
MÁRCIA REGINA VITOLO
CARLOS ALBERTO FELDENS

Título: IMPACTO DE INTERVENÇÃO NA ATENÇÃO PRIMÁRIA À SAÚDE NAS CONDIÇÕES NUTRICIONAIS DE CRIANÇAS EM IDADE PRÉ-ESCOLAR:SEGUNDA FASE DE AVALIAÇÃO DE ENSAIO DE CAMPO RANDOMIZADO POR CONGLOMERADOS

Esse projeto foi aprovado em seus aspectos éticos e metodológicos conforme as Resoluções 196/09 e demais Resoluções complementares. Toda e qualquer alteração do projeto, assim como eventos adversos graves, deverão ser comunicados a este CEP. Os TCLE, quando necessários, somente poderão ser utilizados após prévia e explícita aprovação (carimbo) de sua redação por este CEP".

Porto Alegre, 06 de maio de 2011.

José Geraldo Vernet Taborda
Coordenador do CEP/UFCSPA