The relationship between orthorexia nervosa and food label claim use

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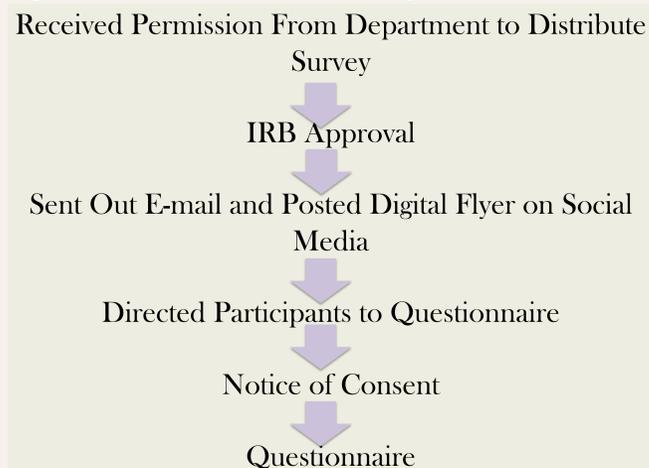College of Health & Human Services, California State University Long Beach

Introduction

Orthorexia Nervosa was first coined in 1997 as an "obsession with eating healthy." There is still limited information about its exact diagnosis criteria, however past research suggests that overanalyzing food label claims could be a trait of ON. The purpose of this study is to assess the relationship between orthorexia nervosa (ON) and food label claim use among adults 18 years or older.

Methods

- Cross-sectional correlational study
- Convenience sampling: 73 participants
- ORTO-15 questionnaire used to determine the severity of ON tendencies (a score<40 indicates being at risk of having ON)
- Food label claim use questionnaire consisted of 10 Likert scale questions to determine:
  - The frequency of use of 8 different food label claims
  - The ease of using food label claims
  - The level of influence of using food label claims Fisher-Freeman-Halton Exact Test, Cramer's V, and Spearman's Rank correlation tests were used to analyze the data.
- Statistical Analysis: Fisher-Freeman-Halton Exact Test, Cramer's V, and Spearman's Rank correlation tests

Figure 1. Outline of recruitment and survey distribution.

Received Permission From Department to Distribute Survey

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IRB Approval

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Sent Out E-mail and Posted Digital Flyer on Social Media

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Directed Participants to Questionnaire

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Notice of Consent

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Questionnaire

Results

- **Spearman's Rank Correlation** - Negligible to weak negative correlation between ORTO-15 score and food label claim use
- **Fisher-Freeman-Halton Exact Test** - there was an association between being at risk for ON (ORTO-15 score <40) and frequency of using "Non-GMO Project Verified"(p=.007) "All-Natural" or "Natural" (p=.040) "Low-Fat" (p=.025), and Level of influence of food label claims (p<.001)
- **Cramer's V** supports that the association between these variables and ON is strong

Table 1. Spearman's Rank (rs): Correlations between ORTO-15 scores and FDA-regulated food label claim use frequency

| Food Label Claim	"Low-Fat"	"0 grams added sugar"	"Heart Healthy"	"Supports bone health" and/or "Supports immunity"
Correlation (r_s)	-0.355*	-0.285*	-0.281*	-0.387*

*p<.050

Table 2. Fisher-Freeman-Halton Exact Test (P-Value) & Cramer's V: Association between at risk of ON and level of influence of food label claims and frequency of using food label claims.

Variable	Frequency of Using "Low-Fat"	Frequency of Using "All-Natural" or "Natural"	"Non GMO Project Verified"	Level of Influence of Food Label Claims
P-Value	0.025*	0.040*	0.007*	<0.001*
Cramer's V (V^2)	0.391*	0.369*	0.403*	.446*

*p<.050

Figure 2. Jitter plot of ORTO-15 score and frequency of using "Supports bone health" and/or "Supports Immunity"
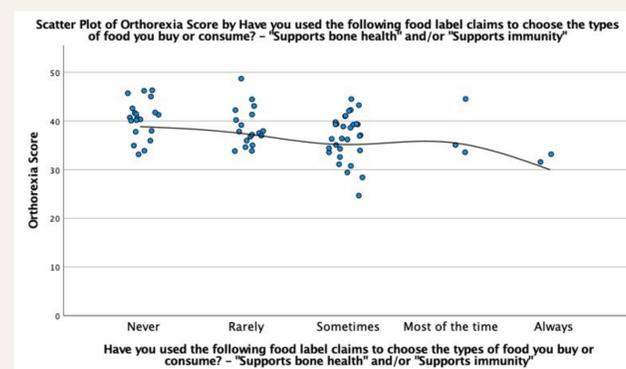

Discussion

Results from the Spearman's rank correlation, suggest that the **relationship between ORTO-15 score and food label use is weak**, as there was a weak statistically significant negative correlation between level of influence of food label claims and frequency of using certain food label claims and ORTO-15 score. This could have been due to the **small sample size** and due to 63% of the participants having ORTO-15 scores that classify them as being at risk for ON (Figure 3). The Fisher-Freeman-Halton Exact Test and the Cramer's V suggest that there is a **strong statistically significant association** between frequency of using "Low-Fat", "Non-GMO" and "All-Natural" food label claims and being **at risk of ON**. Two of the three food label claims that were associated with being at risk were **credence claims**, which suggests that those with ON may prioritize credence claims over FDA regulated claims. Interestingly, these credence claims relate to the process of making the food, but they do not provide information about a food's nutritional value. The Cramer's V supports that those with ON may view food label claims as having an influence on them. Additionally, there was a **strong statistically significant association** between level of influence of food label claims and **being at risk of ON**. This **supports the hypothesis that there is an association between the influence of food label claim use and ON**.

Figure 3. Pie chart demonstrating the percentage of participants at risk of ON based on ORTO-15 questionnaire

Percentage of Participants at Risk of ON

- At Risk for ON (ORTO-15 Score <40)
- Not at Risk for ON (ORTO-15 Score ≥ 40)
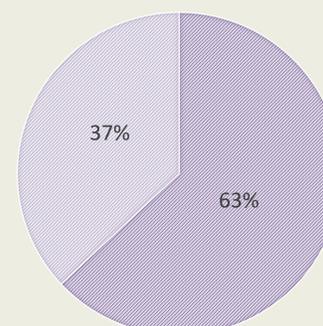
Conclusion

The study suggests frequency of using certain food label claims and the level of influence of food label claims is associated with being at risk of ON. This data supports the hypothesis that those with ON may be more likely to use food label claims. It is important to note that this is a pilot study, so more research is needed to support that those with ON are more likely to use these food label claims.

Acknowledgements

Selected References

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