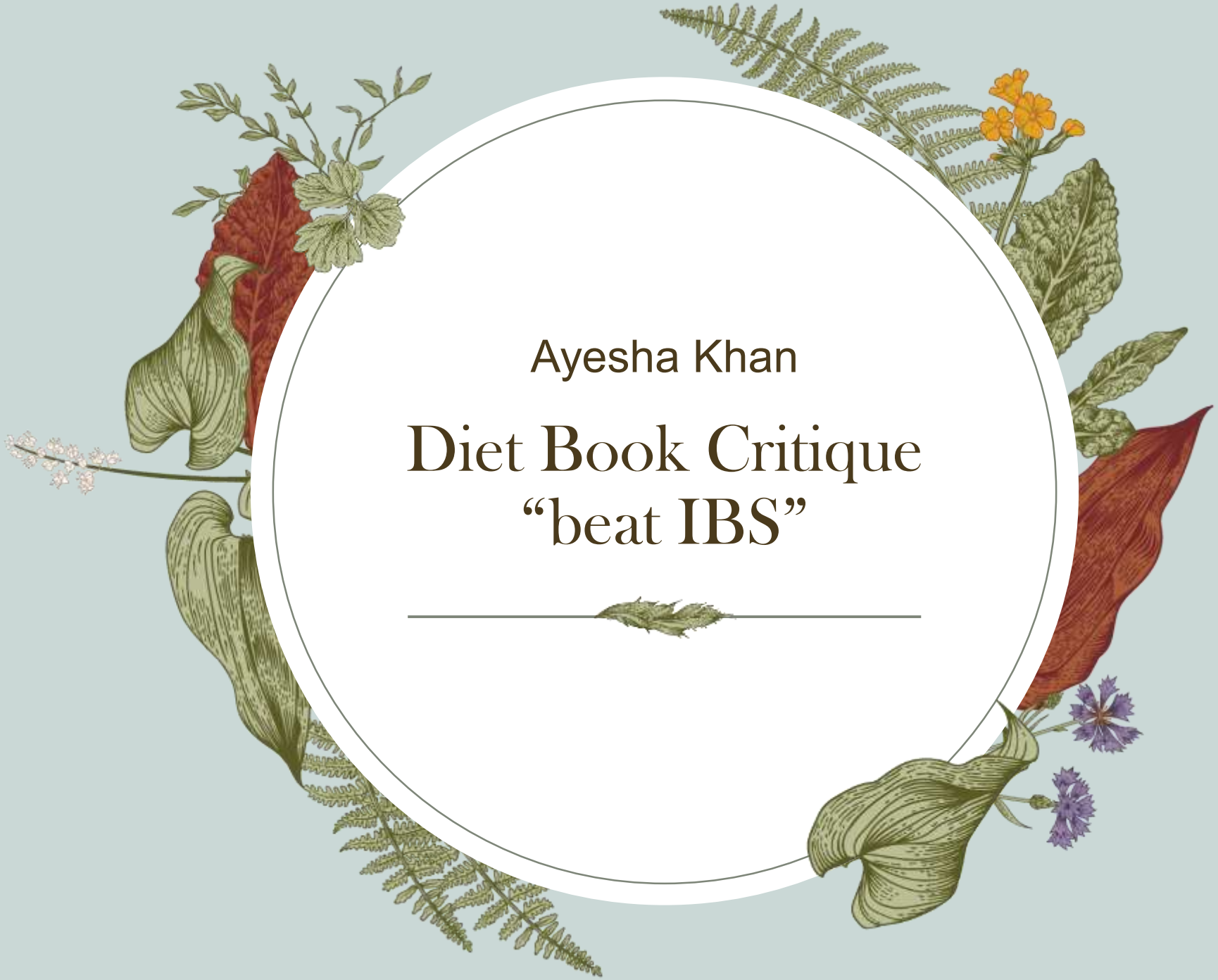

Ayesha Khan

Diet Book Critique “beat IBS”

Agenda

Introduction

Objective

Review Methods

Findings/Results

Discussion

Conclusion

Introduction

- Hilda Glickman, author of beat IBS
- 5 steps that focus on cause identification & strengthening the digestive tract
- IBS is defined as a group of symptoms occurring together[1]
- Prevalence of IBS is around 11% in the general population[2]
- Rome Criteria: symptom-based diagnostic criteria[3]

- Diet has shown to play a role in risk of IBS[2]
- Hilda's dietary advice:
  - "Natural, whole, unprocessed foods, eaten fresh and as nature intended"
  - Highly processed food are "bad foods" and should be excluded
- Ultra-processed foods (UPF) are defined as industrial formulations[4]
- Western countries: significant growth in consumption[4]
- Digestive problems are common and what foods we eat may influence our gut health.

PICO Q

In adults (age range 19-45 years) with self-reported digestive problems (diarrhea, constipation, gut inflammation etc.) what is the effect of consuming **unprocessed** foods (fresh organic vegetables and meat, and whole fruits etc.) on **gut problems** (diarrhea, constipation, gut inflammation etc.) compared with consuming **highly processed** foods (vegetable oils, white bread and pasta etc.) over a time period of 3 months?

Objective

Summarize the data to assess the relationship of ultra-processed and unprocessed food with digestive problems

Rationale

Prevalence of ultra-processed food intake has become a growing concern

Western diet consists of these highly processed foods

Increasing the consumption of these foods has shown to increase risk of diseases and worsen health

Purpose of systematic reviews,

- Consistent scientific findings
- Bringing a body of evidence together
- Accuracy of conclusions

Identifying, appraising, and synthesizing all the relevant research articles on the PICO Q

Review Method

Search Strategy	Inclusion Criteria	Exclusion Criteria	Quality Assessment	Data Synthesis
• PubMed & Google Scholar • Key search terms • “irritable bowel syndrome” AND “processed food” • “irritable bowel syndrome” AND “western diet” • “processed food” AND “gut health”	• Original peer-reviewed articles • Age range 19-45 years • English language • Humans • 2017-2023 dates • Cohort, RCT, cross-sectional, case control studies	• Kids, adolescents, and elderly • Other languages • Non-human • Publication dates <2017 • Reviews, letters, editorials	• Quality Criteria Checklist (QCC) • Studies rated +, - , or ∅ • Research topic, sampling, population, intervention, outcome measure, statistical analysis & interpretating findings	• Tabulated study characteristics • Author/Year, study design, study quality, sample size, location, age, outcomes • Useful insights and associations

	Key Search Terms	Number of Hits
PubMed	“Irritable bowel syndrome” AND “processed food”	6
	“Irritable bowel syndrome” AND “western diet”	16
	“Processed food” AND “gut health”	4
	“Unprocessed food" AND "gut health"	0
Google Scholar	“Processed food” AND “bowel function”	566
	“Processed food” AND “gut health” AND “cohort study”	356
	“Unprocessed food" AND "irritable bowel syndrome"	147
Total hits		1095

Evidence Summary Table

Author/ Year	Study design	Quality rating	Location	Sample size	Age range/ Mean age	Gender	Health outcome
Schnabel L, Buscail C, Sabate JM, et al., 2018	Prospective Cohort Study	(+)	France	33,343	50.4 (SD = 14.0) years	M/F	Functional gastrointestinal disorders
Mignogna C, Costanzo S, Di Castelnuovo A, et al., 2022	Cross-sectional Study	(Ø)	Molise, Italy	24,325	≥ 35 years	M/F	Low-grade inflammation
Buscail C, Sabate JM, Bouchoucha M, et al., 2017	Cross-sectional Study	(+)	France	44,350	49.7 ± 14.3 years	M/F	IBS risk
Lo C, Zhao L, Eurídice Martínez Steele, et al., 2023	Cross-sectional Study	(Ø)	United States	12758	(Study adjusted for age)	M/F	Bowel function
Salari-Moghaddam A, Keshteli AH, Esmaillzadeh A, et al., 2019	Cross-sectional Study	(+)	Iran	3363	18-55 years	M/F	IBS risk
Karl JP, Armstrong NJ, Player RA, et al., 2022	Randomized controlled trial	(+)	United States	54	18-62 years	M/F	Fecal Metabolome

Findings/Results

- **Two studies reported on the association of a highly-processed diet with risk of IBS[2,4]**
- Camille Buscail et al., used a principal component analysis (PCA) to determine major dietary patterns based on 29 food groups' consumption in the cohort
- Western DP was highly associated with a moderate increased risk of IBS
- Laure Schnabel et al., had the cohort complete at least 3 24-hr food records. Proportion (in weight) of UPF in the diet (UPFp) was computed for each subject.
- UPF was associated with increased risk of IBS
- QCC ratings for both are (+)
- **One study (Molise, Italy) discussed the role of processed foods with low-grade inflammation[5]**
- FFQ, NOVA classification, and Energy-adjusted Dietary Inflammatory Index (E-DII™) were used
- Low-grade inflammation was assessed by a composite INFLA-score
- E-DII score… inversely associated with minimally processed food & directly associated with processed/ultra-processed food
- INFLA-score… inversely associated with minimally processed food & directly associated with processed/ultra-processed food
- QCC rating (∅)

- **One study (Iran) reported on the relationship of pro-inflammatory food consumption and IBS prevalence[6]**
- This study used a FFQ to examine dietary intakes. Dietary inflammatory index (DII) was calculated based on intakes from FFQ
- Increased odds of IBS, in particular among women and those with BMI ≥ 25 kg/m2.
- QCC rating (+)
- **One RCT (US) reported on the association between processed food & fecal metabolome/gut microbiota[7]**
- Participants consumed either their usual diet (CON) or they consumed a processed, ready-to-eat military ration diet (MRE)
- Alters the fecal metabolome of healthy adults.
- Fecal concentrations of multiple dipeptides & long-chain SFAs increased, whereas plant-derived compounds decreased in MRE versus CON
- QCC rating (+)
- **One cross-sectional study reported on the association between ultra-processed food and unprocessed/minimally processed food (UMP) consumption and bowel function among US adults[8]**
- Data from the NHANES survey (2005-2010).
- Greater UPF intake… higher risk of constipation but not diarrhea
- Greater intake of UMP… lower risk of constipation but not diarrhea
- Replacing 50% of UPF weight in diet with an equivalent proportion of UMPs was associated with a lower risk of constipation
- QCC rating (Ø)

Discussion

- Aim… summarize the body of data and form conclusions on the relationship of ultra-processed and unprocessed food with digestive problems
- Positive association between ultra-processed food consumption with increased risk of IBS and gut-microbiota inflammation was found
- Lack of information on unprocessed food with digestive symptoms
- Further research needs to be done to understand the following,
  - Degrees of food processing on IBS symptoms
  - Diet-gut microbiota interactions
  - Role of unprocessed/minimally processed food in digestive problems
- Several strengths & limitations of the study

Strengths & Limitations

Strengths of the Review

- Extensive search done to find the most recent research studies
- Eligible studies made adequate adjustments for potential confounders
- Methodology that can be reproduced
- Scope was clear
- Large sample for studies might compensate for the lack of adequate research done

Limitations of the Review

- Studies largely consisted of cross-sectional studies
- Restricting search to PubMed and Google Scholar
- Cohorts not representative of general population regarding food intake
- Data extraction & QCC for studies done by one person
- Misclassification via NOVA cannot be ruled out

Discussion Continued...

- Reason for the results I got… generalized terms
- If I could do things differently, I would focus on specific associations to draw more accurate conclusions
- UPF emerging health risk
- Intake of UPF and adverse health outcomes provides insights into dietary policies and guidelines
- Decreasing consumption of these foods is evident
- Systematic review revealed a lack of experimental and longitudinal studies on this topic
- The most important one being unprocessed food
- This area of research needs to be explored to better understand different relationships and to draw conclusions that are more accurate and reliable

Conclusion

Indicted a positive association between UPF consumption and IBS risk and inflammation

Search yielded no articles studying the association between unprocessed food consumption & digestive problems

Results encourage a decrease in consumption of UPF

Large-scale longitudinal and experimental studies need to be done

Thank you

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