



The Main Sources of Anxiety and Dissatisfaction of Gestational Diabetes Mellitus Patients as Determined by Content Analysis of Their Blogs

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Gestational Diabetes Mellitus (GDM)

- perinatal mortality and morbidity
- obesity or impaired glucose tolerance in the offspring
- developing type 2 diabetes in later life



Table 2—Mental health and anxiety status scores for women with GDM and control subjects

	Women with GDM (n = 50)	Control subjects (n = 50)	F	P
Mental health (MHI-5)				
Week 30	13.9 ± 4.8	11.4 ± 3.8	8.53	0.004*
Week 36	10.9 ± 3.8	11.7 ± 4.0	1.06	0.31
Postpartum	11.5 ± 4.5	11.7 ± 4.0	0.07	0.79
State anxiety (STAI)				
Week 30	40.6 ± 13.3	34.2 ± 9.9	7.55	0.007*
Week 36	33.7 ± 10.9	35.3 ± 9.1	0.63	0.43
Postpartum	31.7 ± 10.6	34.1 ± 10.9	1.19	0.28
Trait anxiety (STAI)				
Week 30	39.5 ± 10.3	38.3 ± 10.2	0.31	0.58
Week 36	36.0 ± 9.0	37.8 ± 10.4	0.88	0.35
Postpartum	34.4 ± 10.5	36.7 ± 9.5	1.37	0.24

Data are means ± SD. *P < 0.05.

GDM & Anxiety

Increased stress/anxiety related to

GDM diagnosis and the perception of a high risk pregnancy

Fear of maternal and infant complications

Losing control of GDM during the process of dietary management

Initiation of insulin therapy

Gaps in Patient-Physician Interaction

Perceived physician authority

Strictly Professional Relationship

Physician dominated consult

Physician dismissal of 'minor complaints'



None in
GDM

Objectives

Primary Objective

- To determine the **sources of anxiety and dissatisfaction** of patients with GDM in relation to their disease by **content analysis** of their **blogs**

Objectives

Sub-Objectives

- To characterize the profiles of the bloggers who have GDM
- To characterize the blogs of patients with GDM through sentiment analysis (positive or negative)



Methodology

Study Design

- Content analysis
- Internet
- No direct patient interaction

Definition of Terms



- largest database of healthcare related Twitter conversations
- Use of hashtag for diseases



Definition of Terms

The logo for 'linguakit' is displayed in a white rectangular box. The word 'lingua' is in a bold, orange, sans-serif font, and 'kit' is in a bold, blue, sans-serif font.

- Linguistic analytic tool
- Sentiment analyser – positive or negative sentiment

Definition of Terms

Content Analysis

- Research method for objective, systematic and quantitative examination of communication content
- Coding system

Phase 1

Inclusion: Blogs by GDM Patients
Exclusion: Inaccessible;
Non-English Language

Phase 2

CHARACTERIZATION

Identifying blogger profiles
and blog characteristics
using *Linguakit Tool*

Phase 3

CONTENT ANALYSIS

Determining sources of anxiety
and dissatisfaction in blogs



Results

Phase I (Online Search)

SYMPLUR SIGNALS

HEALTHCARE HASHTAGS ▾

BLOG

CONTACT

#gestationaldiabetes

#Gestationaldiabetes transcript

Healthcare Social Media Transcript

From: Tue Mar 21 0:00:00 PST 2006
To: Fri Jul 31 23:59:00 PDT 2015
change time period

What is [#Gestationaldiabetes](#)? Who were the influencers during this time period? [#Gestationaldiabetes analytics](#)




[Healthcare Conference](#) - [Healthcare Tweet Chats](#) - [Healthcare Analytics](#)

 Tweet  Like 0

Print Transcript

bohodork



"Woman Gives Birth to 16-Pound Baby" by @ntellectual <http://ow.ly/5E9bl> via @TheRoot247 #diabetes #gestationaldiabetes
Wed Jul 13 21:38:17 PDT 2011   




eating42dotcom



#Bloodclots #highbloodpressure #pre-eclampsia #gestationaldiabetes @Telegraph <http://t.co/VIU7jlup>
Sat Jul 7 0:55:37 PDT 2012   

mhtf



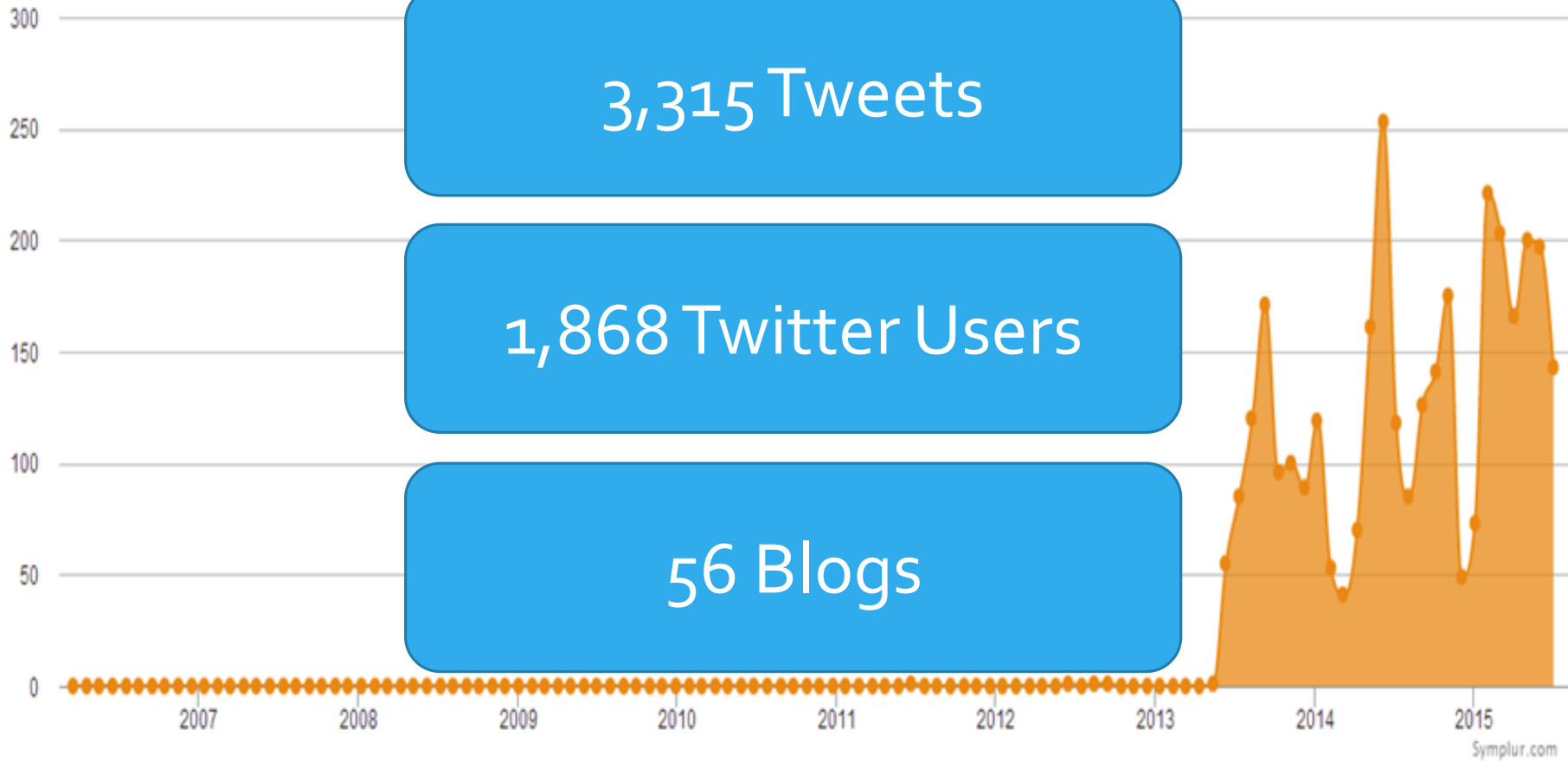
A system-based intervention to improve postpartum #diabetes screening among #women w/ #gestationaldiabetes <http://t.co/Jh>
Wed Sep 5 8:26:35 PDT 2012   

Tweet Activity on #Gestationaldiabetes

3,315 Tweets

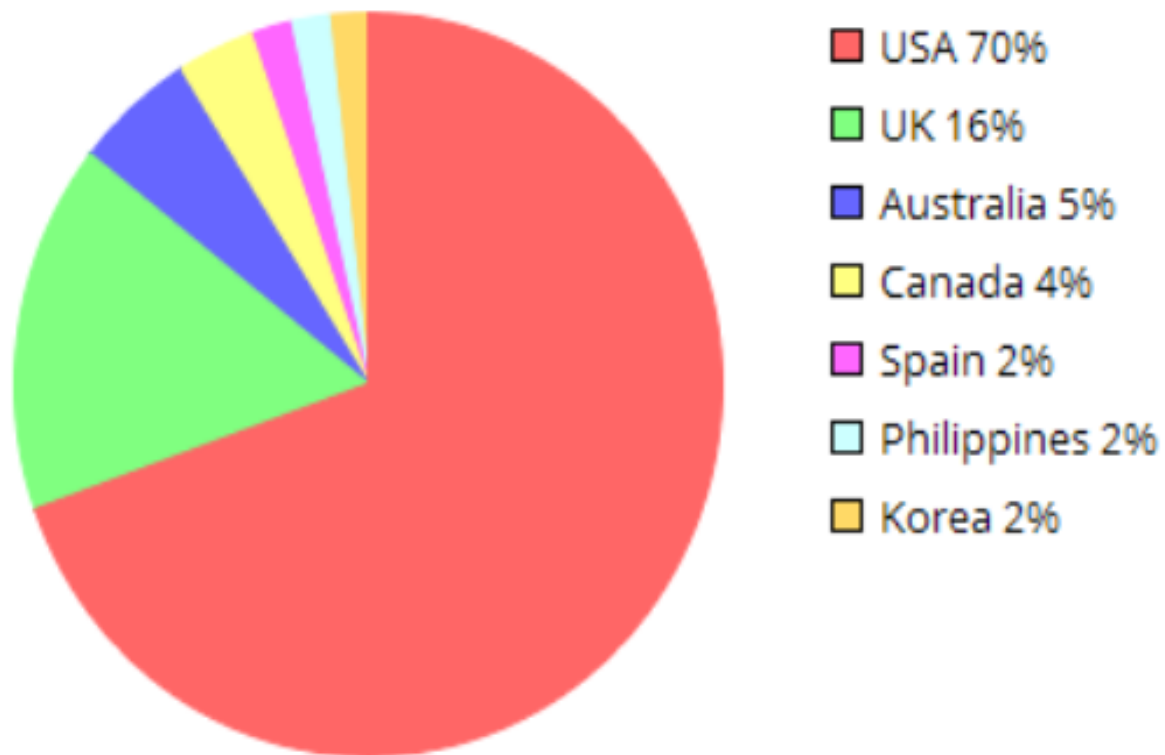
1,868 Twitter Users

56 Blogs



Phase II (Characterization of Bloggers)

Country of Origin



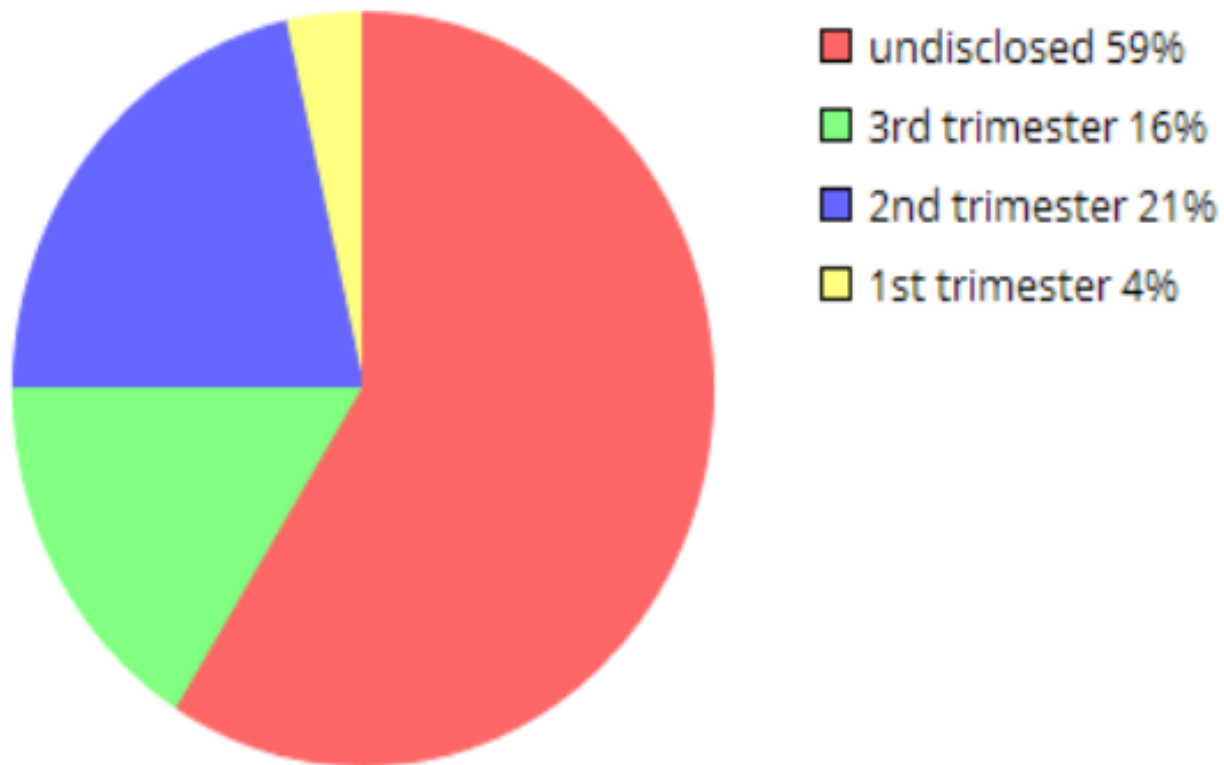
Phase II (Characterization of Bloggers)

Trimester when blog was written



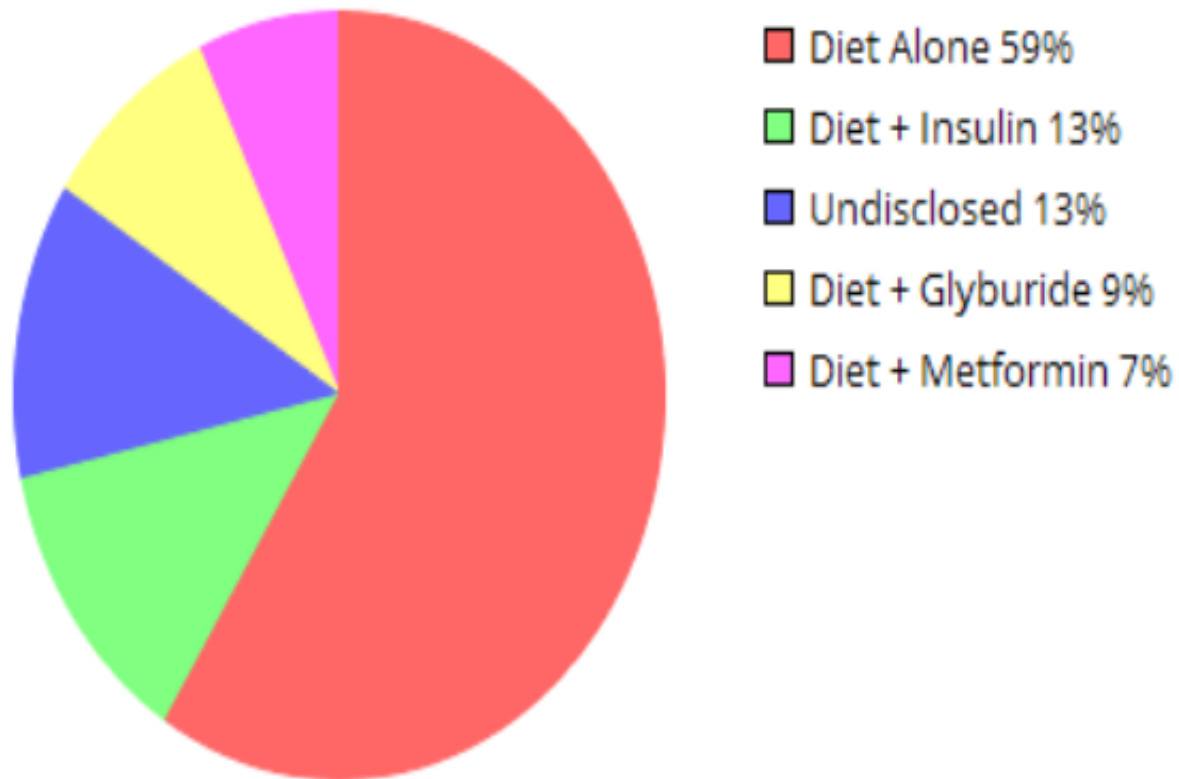
Phase II (Characterization of Bloggers)

Trimester at diagnosis



Phase II (Characterization of Bloggers)

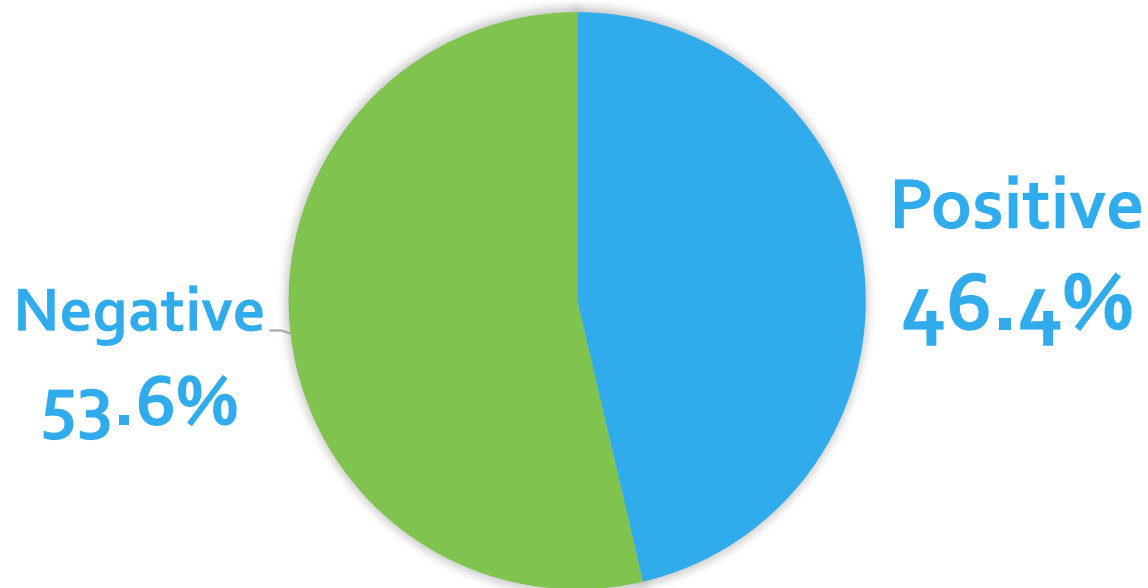
Treatment Type



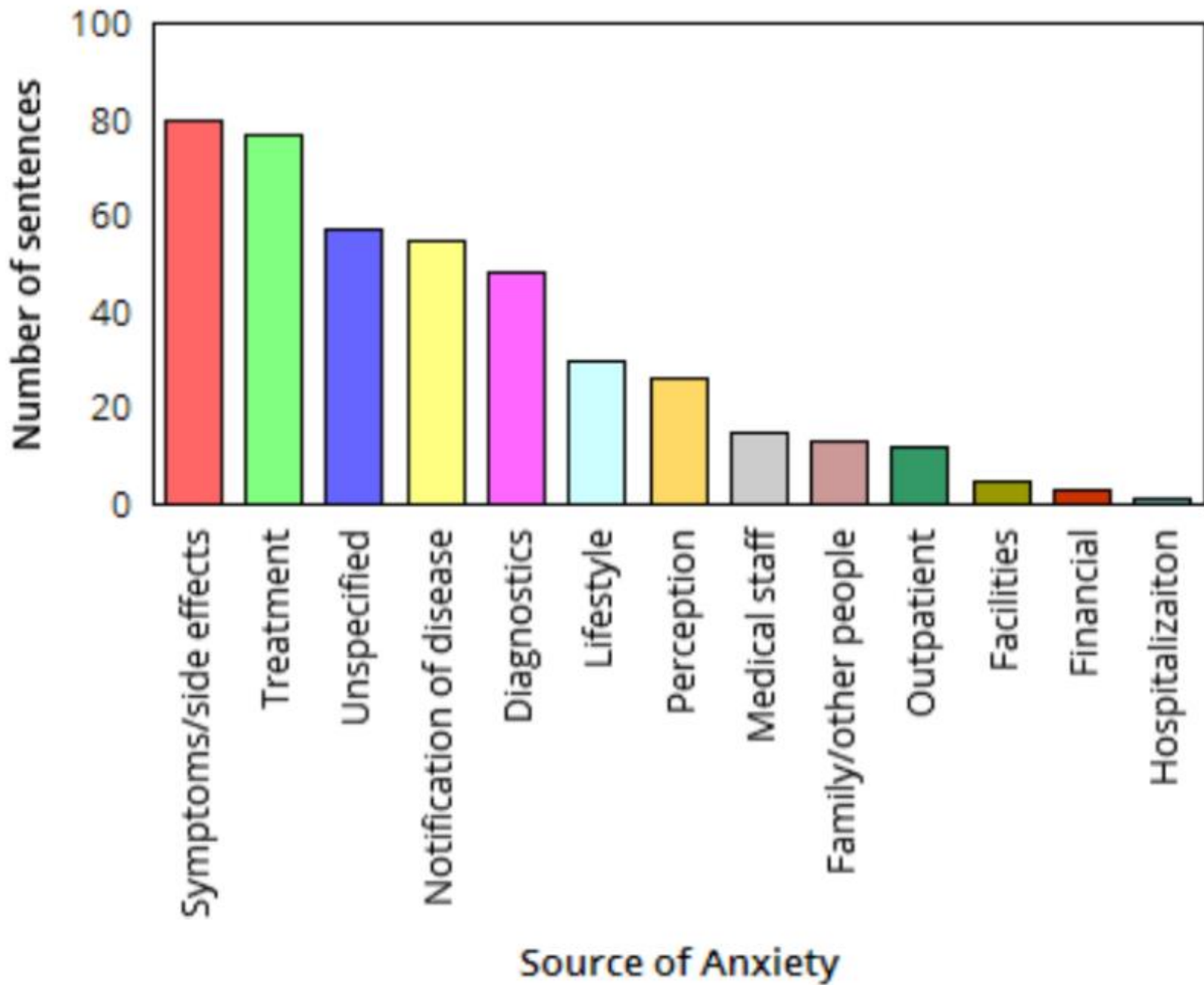
Phase II (Characterization of Blogs)

linguakit

SENTIMENT ANALYSIS



Code	Category
1	Notification of disease/Initial diagnosis of disease
2	Outpatient consult/procedures
3	Hospitalization/Hospital discharge
4	Diagnostics/Laboratory tests
5	Initiation of Treatment
6	Facility/Equipments in clinics and hospitals
7	Relationship with medical staff
8	Symptoms/Side effects/complications of disease and/or drugs
9	Way of living, view of life, reasons for living, lifestyle
10	Work/financial burdens
11	Relationships with family and members of society except medical staff
12	Perception of the disease
13	Anxiety, dissatisfaction not otherwise specified



Similar Studies

- Hui et al stress is related to GDM diagnosis and treatment inadequacy and fear of maternal and infant complications.
- DAWN study by Lapolla et al, increased anxiety with diagnosis of GDM.
- These correlation between studies suggest that the most pressing concerns of patients with GDM are related to symptoms/side effects, treatment and notification of disease.

Subanalysis by Region

North America

41 blogs

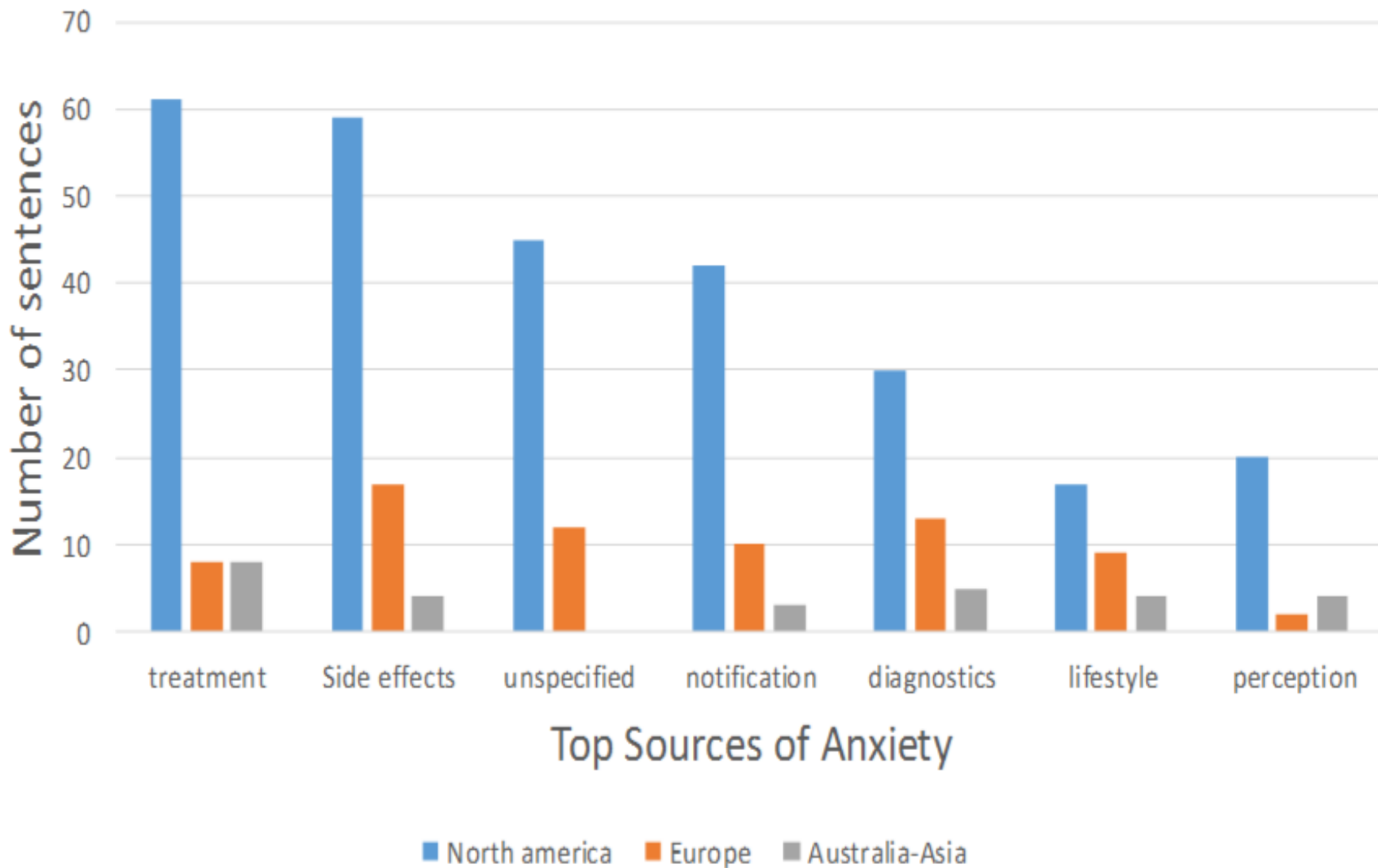
Europe

10 blogs

Asia Pacific

5 blogs

Sources of Anxiety by Region



Subanalysis by Type of Treatment

Diet Only

33 blogs

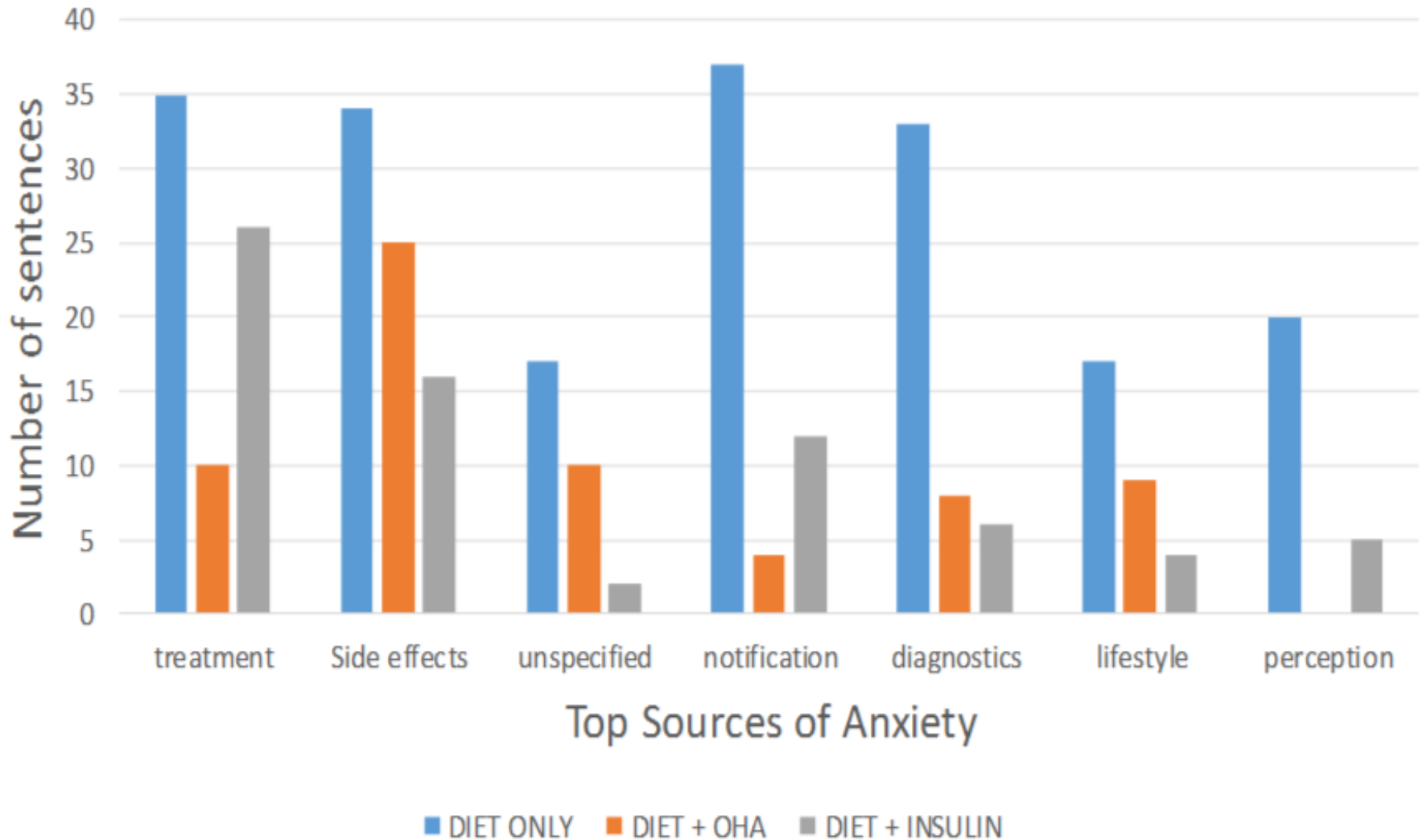
Diet + OHA

9 blogs

Diet + Insulin

7 blogs

Sources of Anxiety by Treatment Type



Limitations

- limitation of search of blogs through Twitter using Symplur
- blog authors talk about the same sources anxiety/dissatisfaction in more than one instance
- patients may emphasize more the anxiety that is significant

Conclusions

- This study provides insight into the different sources of anxiety and dissatisfaction in GDM patients through blogs.
- Regional and treatment type differences in the main sources of anxiety/dissatisfaction occur in GDM patients.



Thank You!