

# TEXT MINING ANALYSIS OF THE NARRATIVES OF A PATIENT WITH FIBROMYALGIA

## FOCUSING ON EXPRESSIONS OF PAIN

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**Emerald Hotel, Bangkok PS II-42 16<sup>th</sup> EAFONS**

# Background

- The main symptoms of **Fibromyalgia** (FM:線維筋痛症)

**=widespread pain of unknown causes**

Estimates of FM patients in Japan:

- # more than 2 million patients
- # 1.66% of the population
- # 80% are female
- Difficult to diagnose through clinical testing
- Low awareness among medical practitioners
- No definitive treatment, except for symptomatic treatment such as reducing pain



# Purpose



- To understand how a patient with **fibromyalgia** thinks, feels and behaves
- Based on an analysis of a patient's **blog entries**

# Methods Text: “Satoko Hayase's Fibromyalgia Journal”

Website of 505 entries (14 January 2008 - 23 July 2012)

- Diagnosed with **FM** at 18 years old, now 26
- In order for readers to understand **pain** and **anguish** caused by **FM**

## 早瀬さと子の線維筋痛症闘病記

18歳で線維筋痛症と診断され、  
オピオイドで痛みを抑えている日々の命の記録。  
線維筋痛症、周りの不理解、  
その苦しみと、その激痛を少しでも知って下さい。



# Data Analysis

- The journal and blog were analyzed with **text mining software**
- (Text Mining Studio version 4.1)

**1. Overall word frequency analysis**

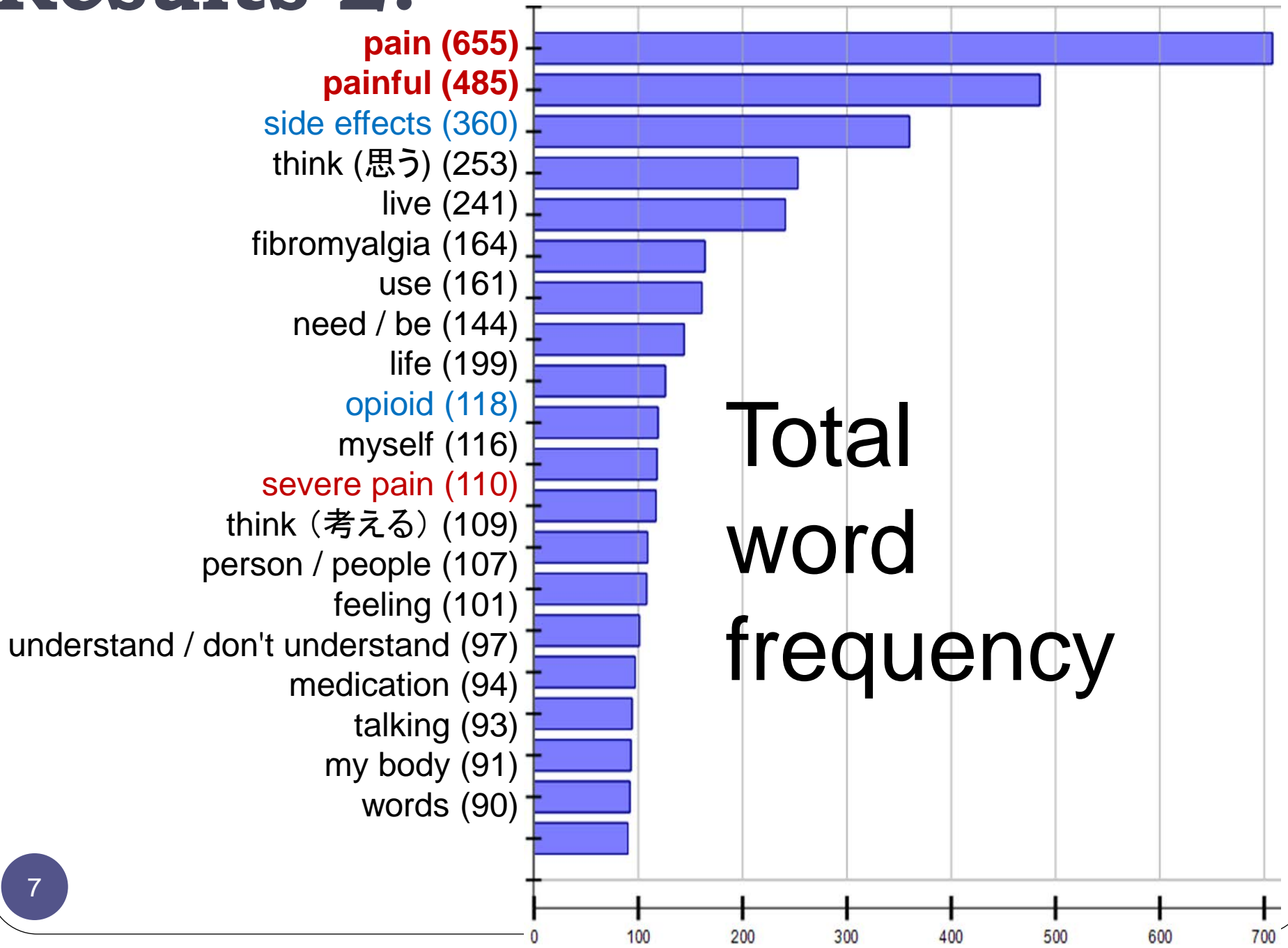
**2. Yearly change of the use of words**

# Results 1. :Basic information

- The total number of entries: 505 pages
- The average number of characters in each article: 163.4
- The average characters in a sentence:13.4
- Word types: 5,720
- Words in total :  
32, 720

<b>year</b>	<b>entries</b>
2008	122
2009	204
2010	85
2011	47
2012	47
<b>total pages</b>	<b>505</b>

# Results 2.



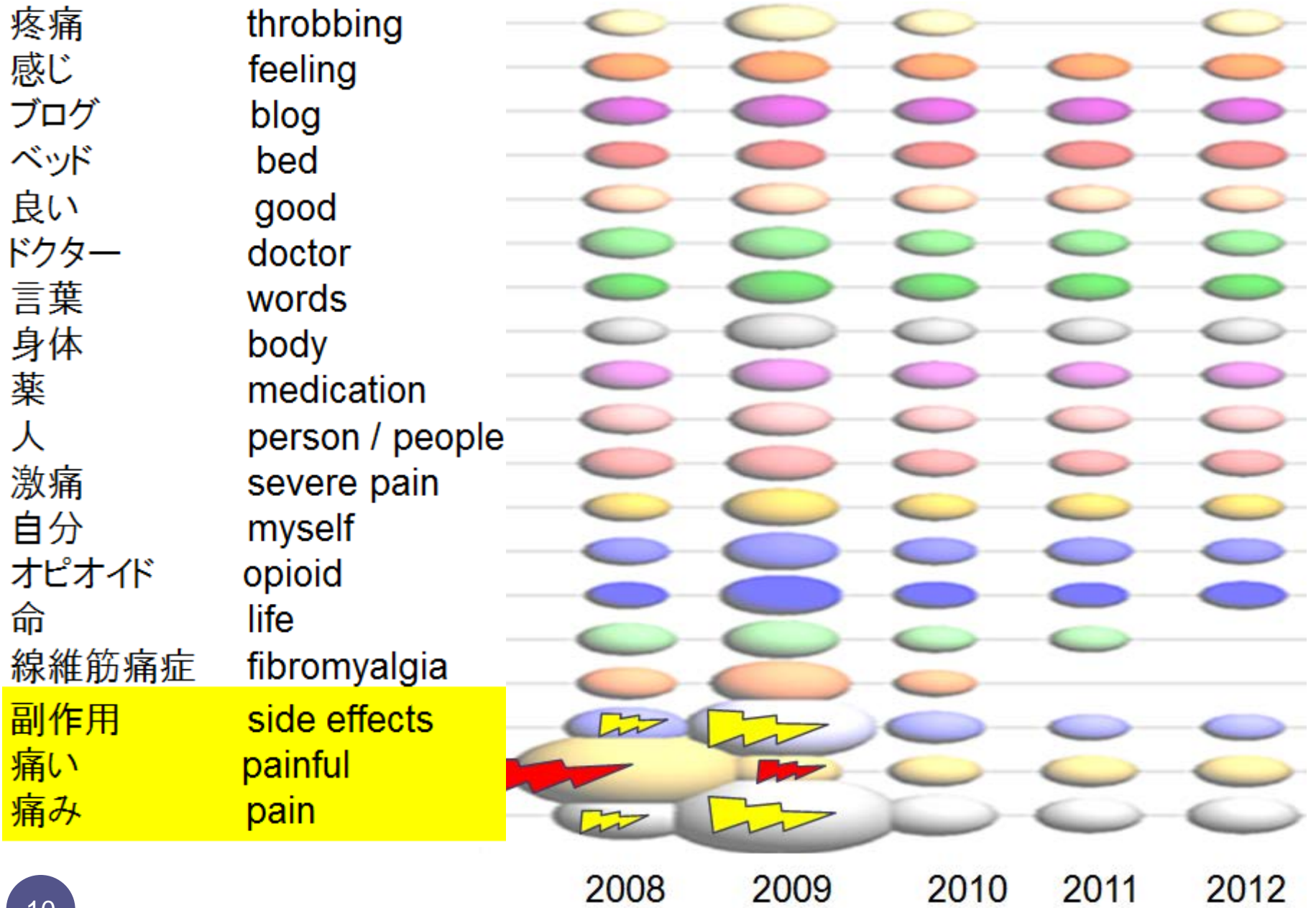
単語	word	part of speech	2008 (y)	2009 (y)	2010 (y)	2011 (y)	2012 (y)	SUM
痛み	pain	noun	133	313	89	55	65	655
痛い	painful	noun	303	83	29	34	36	485
副作用	side effects	adjective	89	221	40	4	6	360
線維筋痛症	fibromyalgia	noun	39	118	7	0	0	164
命	life	noun	39	72	6	2	0	119
オピオイド	opioid	noun	7	85	10	1	15	118
自分	myself	noun	14	72	11	15	4	116
激痛	severe pain	noun	17	71	9	8	5	110
人	person / people	noun	33	56	9	2	7	107
薬	medication	noun	26	46	6	8	8	94
身体	body	noun	22	42	13	7	6	90
言葉	words	noun	9	64	5	7	5	90
ドクター	doctor	noun	9	47	13	10	4	83
神様	God	noun	32	41	2	2	3	80
良い	good	adjective	15	35	11	11	8	80
ベッド	bed	noun	9	22	9	18	18	76
ブログ	blog	noun	15	35	6	12	5	73
感じ	feeling	noun	14	36	7	7	4	68
疼痛	throbbing pain	noun	2	61	3	0	2	68
目	eyes	noun	26	16	7	8	6	63
total in each year			853	1536	292	211	207	3099




# Results 3. Pain and agony

- **“pain”** (#1) + **“painful”** (#2): 1,140 (36.8%)
- Plus **“severe”** (#8)/ **“throbbing”** (#19) pain: 1,318 (42.5%)
- The frequent occurrence of **pain-related words**
- Predominance of **painful experiences** of **fibromyalgia** in the narrative





## Results 4. From *painful* to *pain*

- 2008 (first year): “**painful**”  

- 2009 (second year): “**pain**” and “**side effects**”
- From *direct* experience of pain  
*here and now*
- To *strategies for coping* with  
pain and medicine

# Conclusions

- FM is a disease of *pain*

- Further research on

*Narrative Based Medicine (NBM)*

of FM is needed (as well as *EBM*)

- **Fibromyalgia** should be more clearly recognized by:

- 1) the *medical* community
- 2) *society* in general

