Applied Linguistic Dynamic Models and Lexical Choices in Mental Health News

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Abstract. Language and lexical choices in media, particularly in mental health news, are critical as they have impact on shaping public perception, understanding of as well as responses to medical information and content. The language and words used in news are significant since these often make a subtle difference in the way readers or viewers perceive the story. This point emphasizes the need to choose the words to be used carefully in news texts so that the content can be understood clearly without bias. The current study analyzes a total of 725 news articles retrieved from six different daily national newspapers published in Türkiye in order to evaluate some aspects of stigmatizing descriptions and / or misleading information regarding mental health problems and people living with mental health disorders. The content in nine news items with a focus on lexical choices and wording is provided as a representative sample to reveal what kind of inaccurate reporting examples exist in the articles analyzed by qualitative and quantitative content-based lexical analysis. The examples provided in the sample reveal that linguistic and lexical choices in mental health news can be stigmatizing, discrediting or labeling; these choices make frames of dangerousness, victimhood and weirdness more salient. The language model proposed in the current study aims to elucidate how robust linguistic structures generated can be adapted to schemes where linguistic features are evaluated by paying attention to individual and societal considerations. This kind of applied linguistic-based approach based on frequency analyses of descriptive statistics regarding practical use of language can direct decision-making power and policy decisions based on benchmarks and standardization guidelines of language use within applicable sensitive, humanizing, pluralistic and holistic frameworks.

Keywords: Computational Linguistics · Applied Linguistics · Lexical Imprecision · Linguistic Dynamism · Media Language · Lexical Choice · Stigmatizing Language · Discrediting Language · Language Education · Content Analysis · Mental Health Discourse · News Media Texts · Situation Determination · Observation Probability · Time-Frequency Statistical Analysis

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1 Introduction

Language and lexical choices in media, particularly in health news, are critical as they have impact on shaping public perception, understanding of as well as responses to medical information and content. The language and words used in news are significant since these often make a subtle difference in the way readers or viewers perceive the story. This point emphasizes the need to choose the words carefully so that the content can be understood clearly without bias or misleading content. Accordingly, lexical choice refers to word or vocabulary that is varied with the particular form or style of the text, personal judgment, cultural or background of the writers [1]. Through lexical or word choice an impression is formed on the side of the readers, so it is an important element that implies the writer's attitudes along with determining how interestingly or accurately the writer communicates his/her ideas [2]. Lexical choice in media signifies the deliberate selection of specific words, phrases and terminology by editors, journalists and reporters to shape meaning, tone and audience perception. This process is a strategic and nonneutral one that reflects organizational bias, preferred ideological framing of events as well as social context. This deliberateness, intention of the producer of the message and dependence on context make the words nonneutral, about which van Dijk states that words are never 'neutral' and the choice of one word over another reveals the writer's ideological bias, political perspective or underlying attitude toward the subject. That language is not neutral but is deeply embedded in power relations and social practices is what is argued by Critical Discourse Analysis (CDA) [3]. Discursive practices refer to the ways discourse is produced, distributed and consumed. In that regard, CDA examines such practices to understand how they contribute to the social norms and structures' formation and maintenance. These point to the important role of context in CDA, referring to the broader social, historical and political contexts in which discourse occurs and influences its production and interpretation. Thus, some scholars emphasize the significance of contextual analysis to understand the way discourse affects and is affected by social relations and power dynamics [4]. The analysis of these practices helps reveal the social functions of language along with its role not only in shaping social identities but also power relations [5]. The role of news media in public health matters is observed to be significant in terms of framing public opinions, raising public awareness, acknowledgment of public health issues and affecting the making of policies [6]. Correspondingly, mental health news coverage is a sensitive and critical issue as media have impact on mental health by reducing stigma and raising awareness regarding mental health problems through providing accurate and empathetic information such as the promotion of help-seeking behaviors and personal stories [7]. On the other hand, the impacts could be seen on the negative side like sensationalizing, exaggerating and/or trivializing issues related to mental health and spreading misinformation [8]. This stance could cause stereotypes to be reinforced and negative emotions like fear, sadness and anger to be triggered. It has often been reported that media contribute to mental illness stigma through the exaggerated, comical and inaccurate images used for portraying individuals with psychiatric disorders as well as providing incorrect information about mental illness [9]. It remains to be a concern that representations in the press are negative disproportionally [10].

The assessment that media portrayals of mental illness have long been recognized as being misleading and stigmatizing despite the campaigns of some advocacy groups

to address the issue, the impact on mental health reporting over time was evaluated by a study where a survey which had been done 15 years ago was repeated [11]. Nine UK daily newspapers were surveyed and coded with a schema to analyze the reporting of mental health compared with physical health, and the results of the research demonstrated that more than half of the articles on mental health were negative in tone, 18.5% indicating an association with violence compared with 0.3% of articles on physical health. With regard to representation of mental illness in the UK press, a critical corpus linguistic analysis analyzed what the terms 'mental health' and 'mental illness' referred to along with the way people with mental illness were named and referred to in reports on mental illness [12]. The analysis revealed overlexicalization, emphasizing how lexical items are often used in contexts that fail to inform the public properly, specifically linking mental illness to violent contexts. As suggestions, it was argued that it would be beneficial if journalists and mental health charities make certain changes to the way they write about mental health. In addition, it was suggested that linguistic evidence should be taken into account before preparing guidelines stipulating prescribed linguistic forms for discussing mental illness in the press. Another significant change that could be implemented for journalists would be to more accurately depict the symptoms of mental illness in news articles and ensure that symptoms be contextualized appropriately. One recent work based on computational linguistic-based analyses on newspapers published in Türkiye has revealed that negative descriptions, attributions and connotations regarding people with mental health disorders outnumber the positive ones [13]. Another aim of the study was to analyze whether reporting language on mental health conditions was consistent with the suggestion of the American Psychiatric Association (APA). The results obtained by the study reveal that some lexical choices, particularly certain adjectives and nominalized phrases used in the reporting language, are not in agreement with APA's recommendations, and that news articles often use negative labeling keywords. In another work using qualitative thematic analysis for news articles in Malaysia, three significant themes were identified as follows: people with mental illness have undesirable traits, people with mental illness are a menace and there are risk factors of people with mental illness [14]. The findings of the study indicate that the themes produced were stigmatizing and derogatory towards individuals with mental illness by foregrounding the negative characterization of people with mental illness, naming them as a threat, endangering others.

It has been acknowledged that mass media play a significant role in shaping stigma, particularly among youths. Even though efforts to destigmatize mental health, especially media campaigns, have been put in, it is reported in one research that they have not fully penetrated Latinx and Spanish-language media and that they have not reached consumers either [15]. This lack of reach is said to contribute to high stigma as well as low use of mental health care services among young, diverse and growing Latinx populations. The study projects that knowledge about Latinx media use patterns and depictions of mental health–related content in Latinx and Spanish-language media will help inform effective future antistigma efforts using mass media to reach diverse U.S. Latinx residents, which is an emerging research area with potential to encourage critically required antistigma mental health conversations among communities to facilitate mental health treatment and achieve mental health equity. Regarding positive developments and alternative portrayals stated to be necessary to reduce stigma, some papers

note the improvements in tone in mental health reporting. However, evidence suggests that mainstream media coverage of mental health problems is inclined to focus on crime and violence. One paper aimed to compare the content and tone of mainstream TV coverage of mental illness with educational videos made by citizen journalists having mental illness in Canada [16]. The results showed that the citizen journalist videos were more positive and hopeful, concluding that citizen journalism by people with mental illness had the potential to educate the public and reduce stigma. Individuals may rely on media sources about health issues, so the accuracy of the content plays a critical role in health communication. Research shows that detecting false information is difficult as when one encounters new information, he/she tends to focus on understanding the information and deciding what to do as a next step instead of evaluating it on the basis of its accuracy. It also takes effort to make a comparison of new information with what the person already knows. When new information is false but plausible, one can learn it as a fact, and several factors are likely to increase one's susceptibility to misinformation [17]. A related study aimed to explore disinformation about mental health on social media and offer recommendations to mental health professionals who would use social media platforms to make education videos on mental health issues [18]. 1000 TikTok videos from 16 countries concerning 26 mental health topics were analyzed comprehensively. The authors employed a multilayered perceptron algorithm to identify factors predicting disinformation. The results demonstrated the existence of disinformation predominantly in videos concerning mental health, personality disorders, suicide, psychotic disorders, neurodevelopment and treatment. For the first time in literature, data-driven recommendations were presented to mental health providers globally, addressing the current state of disinformation on social media. Societal perceptions are influenced significantly by mental health discourse which has gained prominence in public media. The representation of mental health in news media texts has been analyzed by transformative technologies, one of which is Natural Language Processing (NLP). One study explored the application of NLP techniques in view of the complex connection between media representation and public understanding of mental health, which is stated to require advanced analytical tools [19]. The study revealed some important limitations of NLP techniques when applied to mental health news coverage. These limitations were demonstrated to be significant biases and accuracy issues in sentiment analysis of mental health content across different media platforms. Based on these evaluations, the study provided future directions in NLP for news media and mental health through the recommendations provided for tailored NLP approaches so that researchers, policymakers and media professionals could benefit from. In contrast, one work underlines the strength of an NLP technique along with the use of multifractal methods concerning the digital-based complex media texts as well as accurate classification and categorization of the words within texts in the dataset having been achieved by Bidirectional Encoder Representations from Transformers (BERT) as the related NLP method employed [20]. The analysis results of the work demonstrated that multifractal Bayesian method was useful for constructing the optimal model, generating more accurate results when compared to the other methods in terms of classification and categorization purposes. Large Language Models (LLMs) are stated to demonstrate remarkable performance across various NLP tasks like including text classification, summarization and generation. LLMs are primarily trained on

curated datasets which lack human-induced errors, such as typos or variations in word choice, and thus, it is likely that LLMs produce unexpected outputs while processing text with such perturbations which are analyzed in one study with respect to typos and word substitutions using two public datasets. The results of the study indicate that LLMs are sensitive to text perturbations, resulting in variations in generated outputs, impacting their reliability and robustness in real-world applications [21]. As the amount of research in literature reveals, mental health news, media and use of language make up a significant line of research. Yet, the number of studies regarding news media portrayal of people with mental disorders for Türkiye context is relatively limited [22–25]. Thus, the current study aims to provide inputs through its analysis of news articles within an applied linguistic dynamic model framework used for evaluating inaccurate content, stigmatizing descriptions and/or misleading information based on lexical choices present in the news texts regarding mental health and people living with mental health.

The rest of the paper is organized as follows: Sect. 2 provides the materials and methods, while Sect. 3 presents the experimental results and discussion. Section 4 concludes the study with conclusion and future directions.

2 Materials and Methods

2.1 Mental Health Print News Dataset

The dataset of the study is made up of newspaper articles that address mental health problems and people with those problems. The news items were selected based on certain keywords concerning mental disorders. The analyzed newspaper articles had been retrieved from the electronic sites of six daily national newspapers published between 2014–2019 published in Turkish in Türkiye. The total number of news articles in the dataset analyzed is as follows: 725 (*Hürriyet* ($n = 218$), Sabah ($n = 168$), *Milliyet* ($n = 158$), *Sözcü* ($n = 110$), *Cumhuriyet* ($n = 38$) and *Posta* ($n = 33$)). Table 1 presents the breakdown of the news articles by newspaper. The newspapers are popular and highly circulating ones in Türkiye.

Table 1. The corresponding number of newspaper articles by newspapers.

Newspaper	Total number of news articles
Hürriyet	218
Sabah	168
Milliyet	158
Sözcü	110
Cumhuriyet	38
Posta	33

Nine news items from the dataset were chosen as excerpts to provide evidence regarding inaccurate, sensationalizing and stigmatizing reporting as some exemplary

cases. Figures 1, 2 and 3 depict them accordingly, with the misleading, inaccurate and stigmatizing language parts indicated in dark red color.

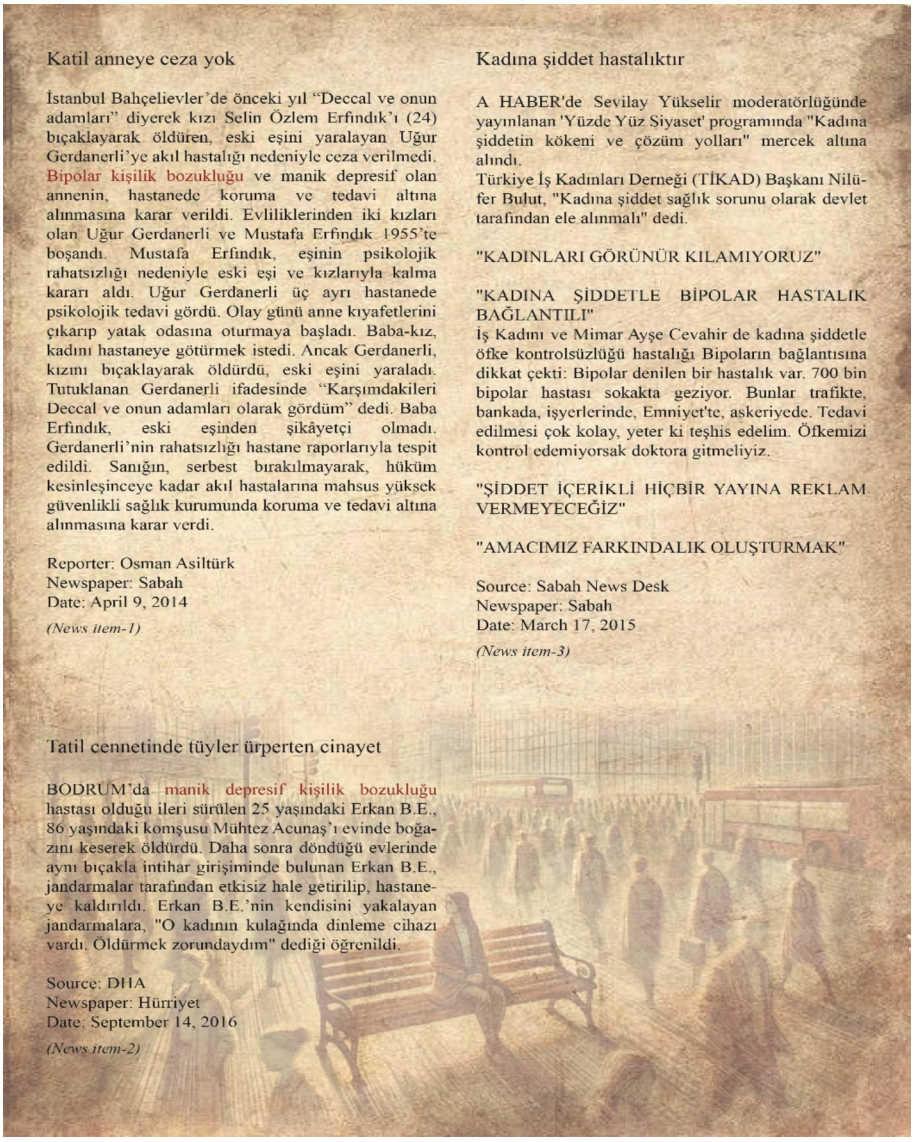

Fig. 1. News items 1, 2 and 3.



Kadınlar ve göç

Kadınlar erkeklerin kölesi değil, tam ekine en büyük yardımcılarıdır. Maalesef günümüz şartlarında, içinde yaşadığımız feodalite, göç ve benzeri sorunlar, onları âdeta bir meta haline getiriyor.

Diyelim ki Türkler azınlığa düştü ve denge tamamen göçmenlerin, özellikle de belli etnik grupların lehine, bizim aleyhimize değişti; buna "dur" diyebilecek bir yetke sahibi mevki, politik lider yahut parti mevcut mu?
Buna "var, gönlünüz rahat olsun" diyebilecek kadar saf mı olduk? Beyanlar, demeçler ve her kafadan çıkan sesin farklı şeyler söylediği bir ortamdayız. Buna politik psikiyatride Kaos (Karmaşa) ve Anomi (isimsizlik, kimlik kaybı) denir.

Bir kere, bu zavallıların çoğunda aşikâr bir şekilde Majör Depresyona yol açacak kadar ciddi fakirlik, Travma Sonrası Stres Bozukluğunu başlarına saracak kadar ağır stres mevcut.

Psikiyatrist Prof. Dr. M. Kerem Doksat

Source: Psychiatrist Prof. Dr. M. Kerem Doksat
Newspaper: Milliyet
Date: March 29, 2016

(News item-4)

Komedyenler psikotik vaka ...

BBC' nin, The British Journal of Psychiatry dergisinde yayımlanan bir araştırmaya dayandırdığı haberinde, komedyenlerin, diğer yaratıcı insanlar gibi psikozla bağlantılı kişilik özelliklerine sahip oldukları ve bu nedenle insanları eğlendirebildikleri vurgulandı. Araştırma için, İngiltere, ABD ve Avustralya' dan 119' u kadın 523 komedyene psikotik kişilik özelliklerinin tespiti için sorular yöneltildi. Araştırmacılar, komedyenlerin, psikotik kişilik özelliklerini tanımlayan 4 ana grupta daha fazla puan aldıklarını gördü. Uzmanlar, "Mizah için gerekli yaratıcı unsurlar, şizofrenive bipolar duygulanım bozukluğu gibi psikozlara sahip insanların bilişsel durumunu karakterize edenlerle çarpıcı biçimde benzeşiyor" dedi.

Source: Anadolu Agency
Newspaper: Sabah
Date: January 17, 2014

(News item-5)

Komedyenler ruh hastası mı?

Şahan Gökbakar hesabında paylaştığı iletiyle ilginç bir tartışma başlatacak gibi görünüyor.

Dünya Amerikalı komedyen Robin Williams'ın ölümüyle sarsılırken, çok sayıda isim onunla ilgili taziye mesajları yayınladı. Günün konusu komedyen olunca da insanlar sadece taziye mesajı yayınlamakla kalmadı aynı zamanda bu meslekle ilgili paylaşımlarda da bulundu. İnsanları eğlendirmekten kendileri depresyona giriyor gibi başlıklar olduğu kadar komedyenliğin komik olmanın bir ruh hastalığı olduğuna dair paylaşımlar yapan da oldu. Bu paylaşım Şahan Gökbakar'dan gelince de sayfamıza taşımak istedik. İşte Şahan Gökbakar'ın hesabından yayınlandığı o araştırma ve iletisi...
Şahan Gökbakar @sgokbakar

Belki de komik olmak bir çeşit ruh hastalığıdır ...

İngiliz Psikiyatri Derneği; Los Angeles'ta bulunan bir komedi kulübünde gösteri yapan 500'den fazla komedyenle uzun süreli terapiler yaptı.

Çalışmanın sonucunda manik depresif ve benzeri rahatsızlıklara sahip komedyenlerin mizah anlayışlarının daha gelişmiş olduğu, psikolojik tehdit altındaki komedyenlerinse diğerlerine oranla çok daha yüksek oranda yeni fikir üretebildikleri ortaya çıktı.

Source: Sözcü News Desk
Newspaper: Sözcü
Date: August 13, 2014

(News item-6)

Fig. 2. News items 4, 5 and 6.



51. Ulusal Psikiyatri Kongresi düzenlendi

Türkiye Psikiyatri Derneği (TPD) medya koordinatörü Doç. Dr. Burhanettin Kaya uyarıyor, "Savaş ve göçün etkileri kuşaktan kuşağa aktarılarak üçüncü, dördüncü kuşaktaki insanları bile ruhsal hastalıklara yatkın hale getiriyor."

EN ÇOK NELER İNTİHARA YÖNELTİYOR?

• Duygudurum bozuklukları (depresyon ve bipolar bozukluk) intiharla en ilişkili olanlardır. İntihar kurbanlarının yaklaşık yüzde 60 ile 70 kadarı ölümleri sırasında önemli derecede depresyondadırlar. Bipolar bozukluk olan kişilerin arasında intihar nedeniyle yaşam boyu ölüm riski yaklaşık yüzde 15 ile 20 kadardır.

Basın toplantısında konuşan TPD Genel Sekreteri Doç. Dr. Mehmet Yumru da medyanın rolü ile ilgili örnekler paylaştı ve intihar haberleri azaldıkça intihar girişimlerinin azaldığını söyledi.

Reporter: Buse Özel
Newspaper: Hürriyet
Date: November 27, 2015

(News item-7)

Yalova'daki engellinin annesi konuştu

Yalova'da seçimlerin iptaline neden olan kısıtlı olduğu iddia edilen AKP' nin 1217 no'lu sandık görevlisi, Hasan Basri Uzuntepe'ye 1 Haziran'daki yerel seçimler için yeniden seçmen kağıdı geldi.

Uzuntepe'nin annesi Nimet Orhun, "Beyin özürlü değil benim oğlum bipolar bozukluğu (manik depresyon) var. Sonradan olma bir rahatsızlık. Bu olay bizim gururumuza dokundu" dedi ...

CHP Yalova Milletvekili Muharrem İnce dün Twitter'dan konuyla ilgili bir video yayınlamıştı. O videoda engelli Uzuntepe, YSK'dan 1 Haziran seçimi için kendine gönderilen seçmen kağıdını gösteriyordu.

Source: Sözcü News Desk
Newspaper: Sözcü
Date: May 29, 2014

(News item-8)

Ünlülerin tuhaf hastalıkları

HASTANEDE TEDAVİ OLDU

Catherine Zeta Jones, bipolar bozukluğu olduğunu ve bu yüzden rehabilitasyon merkezinde tedavi göreceğini açıkladığında hayranları çok şaşırmıştı. Ancak bur birçok oyuncu ya sanatçının mücadele ettiği sorunlardan biri. Bipolar bozukluk bir mani dönemi ve onu takip eden ağır depresyon dönemlerinden oluşuyor. Genellikle de kadınları tehdit ediyor.

BİR DEĞİL İKİ HASTALIK

Dünyanın en çok kazanan futbolcularından biri olarak tarihe geçen David Beckham bir değil iki tuhaf hastalığa sahip. Bunlardan biri obsesif kompülsif bozukluk da denilen takıntı zorlantı bozukluğu. Beckham, nesneleri düz bir sıra halinde dizmek ya da çifter çifter birleştirmek gibi takıntıları olduğunu söylemişti. Beckham' ın diğer hastalığı ise biraz daha tuhaf. Beckham' ın bir başka sorunu ise Tourette sendromu... Tekrar tekrar meydana gelen istemsiz, hızlı, ani hareketler ya da sesler içeren tiklerle seyreden bir tür nörokimyasal bozukluk bu. Bir anlamda insanın içinden geleni istemsiz şekilde dışa vurması.

Source: Hürriyet News Desk
Newspaper: Hürriyet
Date: September 10, 2015

(News item-9)

Fig. 3. News items 7, 8 and 9.

2.2 Methods

Qualitative and quantitative content analysis was carried out for this study to be able to analyze the lexical choices like inaccurate wording, discrediting and stigmatizing language phrases, which are linguistic features, used in the newspaper texts regarding mental health, mental problems and people having mental health conditions. Statistical Package for the Social Sciences (SPSS) software program (IBM SPSS Version 26.0) was utilized for the descriptive, statistical and frequency analyses of the study [26]. The evaluation for achieving these was carried out in two dimensions based on theoretical and quantitative elements, including content analysis regarding the linguistic features and time-frequency statistical analysis, respectively.

2.2.1 Applied Linguistics: Content-Based Lexical Analysis

Applied linguistics aims to identify, examine and provide solutions to real-life problems related to language [27]. Applied linguistics is an interdisciplinary field related to academic areas related to education, communication research, psychology, information science, natural language processing, sociology and anthropology [28]. Applied linguistics involves practical use of language, and in journalism applied linguistics analyzes the use of language, discourse and media practices so that communication quality can be improved and societal impact can be comprehended. Linguistic research is merged with practical journalism training with research areas focusing on news production analysis, multilingual communication, media linguistics, to name some. This combination between applied linguistics and media also helps researchers explore the intersecting aspects of language, communication and technology, addressing the way language is used in digital platforms, journalism, and broadcasting to solve problems related to real-world phenomena. Accordingly, media discourse, multilingual communication, and digital technologies' impact on public communication and social interaction through multimodal analysis belong to the pertinent research areas [29].

From the applied linguistics point of view, the current study employs content-based lexical analysis to address the use of language in the news articles based on the problem that there is a disproportionate amount of negative news content of mental health and people with mental health problems in news media.

2.2.2 Applied Linguistics Dynamic Models: Content and Lexical Analysis by Time- Frequency Statistical Analysis

Time-frequency is used for understanding the distribution of data in the time-frequency domain to detect and separate the components of signals with non-overlapping, compact components, as well as to observe the prevalence of certain categories and identify possible imbalances within the dataset. A time-frequency analysis technique applicable to the nature of the print news dataset has been presented in the study.

An accurate way of classification is a frequency table in which the observed data are clustered into classes. The table which is obtained provides one with the observation number in each class. When an experiment is conducted n times and event A happens f times, the f/n ratio is termed as the relative frequency of event A. Let n increase and f/n relative frequency approaches a limit, this limit is called the probability of A. For n

with big numbers the probability of A is calculated through f/n. For known causes, it signifies the frequency definition of probability [30].

$Relative,\ Frequency = Frequency\ of\ a\ particular\ event/Sample\ size$

The following steps are followed to prepare the frequency table:

1st step: The number of observations is identified. n denotes the number of observation ($50 \leq n$ is preferred).

2nd step: Maximum and minimum values are found. Range is obtained when the difference between them is calculated.

$range = max - min$

3rd step: The number of classes is found.

$\sqrt{n} \leq k,\ \ (k = integer)$

$classnumber = k$ [30].

3 Experimental Results and Discussion

The current study has analyzed a total of 725 news articles retrieved from six different daily national newspapers published in Turkish language in Türkiye between 2014–2019 to evaluate inaccurate content, stigmatizing language, passivity, victimization, discrediting language and/or misleading information along with misdescriptions and category mistakes regarding mental health problems and people living with mental health disorders. Based on the content analysis and frequency analysis results, it was found that the highest inaccurate or misleading content was in *Sabah* ($n = 13$). This was followed by *Milliyet* ($n = 8$), *Hürriyet* ($n = 6$) and *Sözcü* ($n = 5$). *Cumhuriyet* ($n = 2$) and *Posta* ($n = 1$) had the lowest number of news articles with inaccurate or misleading content. These results based on computational linguistic analyses by the newspapers in terms of inaccurate or misleading content are depicted in Fig. 4.

	Newspaper	Inaccurate / Misleading Content
0	Cumhuriyet	2
1	Hürriyet	6
2	Milliyet	8
3	Posta	1
4	Sabah	13
5	Sözcü	5

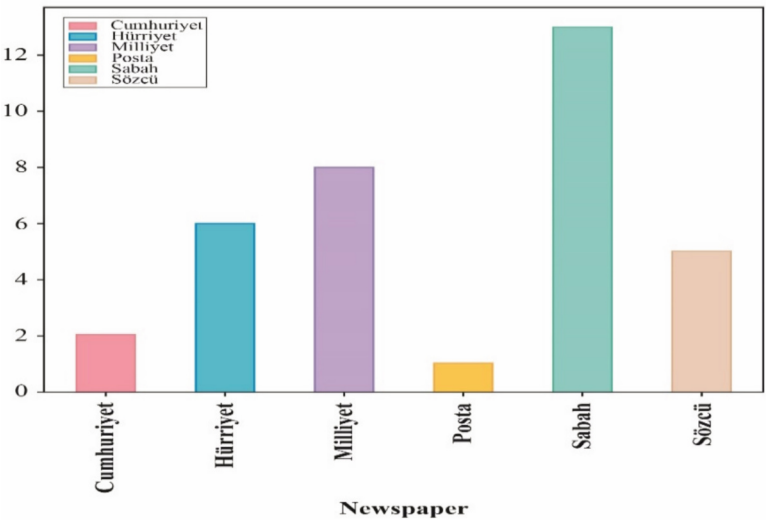

Fig. 4. Inaccurate/Misleading content based on frequency analysis by the newspapers.

The content in nine news items is provided as representative sample to reveal what kind of inaccurate and/or misleading reporting examples exist in the articles analyzed (see Figs. 1, 2, 3 provided in 2.1.). The subsequent parts of the study provide the interpretation of these examples from the selected newspaper articles in line with the related theoretical aspects.

The first two news items illustrated in Fig. 1 contain a factual inaccuracy and category mistake regarding bipolar disorder. Bipolar disorder is a mood or affective disorder with a distinct period of abnormally and persistently elevated, expansive or irritable mood and abnormally and persistently increased goal-directed activity or energy during manic episode(s) [31]. Yet, the disorder has been inaccurately described as 'bipolar personality disorder' in news item-1 [32] and 'manic depressive personality disorder' in news item-2 [33] (those parts are indicated in dark red in Fig. 1). Such taxonomic category errors in terminology could lead to real-world misinformation as a negative outcome.

Framing in communication theory, as put forth by Entman, describes the process where particular aspects of an issue are emphasized, while others are excluded, which is essential for analyzing how a story is told [34]. It is common to find the dangerousness frame in media while framing mental illness from a specific perspective, linking the illness to violence, crime or menace. Research reports that negative presentations of psychotic and affective disorders prevail in the printed media in the United States, Canada and the United Kingdom, with the most frequent topics of articles being violence and dangerousness concerning people with mental illness toward other people [35–37]. For

Central Europe, a study found that the proportion of the articles that depicted psychiatric disorders together with either self- or other-directed aggressive behavior was 31.2%, the vast majority of articles presented people with mental illness as perpetrators, and these articles were more often coded as stigmatizing [38]. Thus, stigma comes to the foreground as another related theory, developed by Goffman who defined stigma as a profoundly discrediting attribute reducing a person from a whole and usual individual to a discounted one [39]. With regard to media, there is another concept named structural stigma which is formed by sociopolitical forces. This kind of stigma represents policies of government and private institutions that limit the opportunities of the groups that are stigmatized. Structural stigma and discrimination occur when an institution like a newspaper, rather than an individual, promulgates stigmatizing messages about mental illness. In a study on structural stigma, 39% of the stories were stated to focus on dangerousness and violence [40]. News item-3 from the sample of this study, illustrated in Fig. 1, is concerned with violence against women, but the article includes the comments of a businesswoman and architect regarding people with bipolar disorder [41]. The inaccuracy in this news item is manifold: the first one is the inclusion of a non-expert on a mental health condition, and the second one is the stigmatizing language used in the news article which reads as follows: "…There is a disorder named bipolar. 700.000 bipolar patients wander in the streets. These are at banks, in traffic, police enforcement, military. It is very easy to treat; the only thing required for us is to diagnose. If we cannot control our anger, we should see a doctor." Grammatically, the use of demonstrative pronoun 'these' is labeling and an example of discrediting language exists, which refers to the use of words or phrases designed to weaken a person's or a group's reputation. The lack of reference for the statistical figure provided for the number of people with bipolar disorder seems to be another problematic aspect of this news item. The other problem is related to dangerousness frame, by stating that the bipolar patients wander in the streets and they are in certain institutions. One more important point to point out could be the trivialization of the situation by stating that the treatment of the disorder is easy. Treatment processes may differ from person to person and multiple factors may play a role in the success of treatment. Stating a comment like "the treatment is easy" is a misleading statement. Finally, the disorder is associated with anger, and all these comments are made by a person who is not a professional in medicine, psychiatry or psychology.

The news item mentioned above includes the comments of a non-expert. The next news item about the effects of immigration on women includes the remarks of a psychiatrist, yet it happens to be problematic due to the labeling and use of derogatory language. News item-4 (Fig. 2) reads as follows: "…For one thing, most of these poor ones have poverty severe enough to evidently lead to major depression besides stress heavy enough to inflict post-traumatic stress disorder upon them…" [42]. Referring to refugees that have the potential of developing major depression due to having experienced severe life conditions as 'poor ones' is an example of a problematic discourse of victimization and disempowerment. The labeling of the event by selecting some aspects of perceived reality and making them more salient in the text is framing, which is the victim framing by using 'poor ones' in this news item. In addition, labeling, stereotyping and othering lead to a loss of status and discrimination in public discourse. This

is because there are many stigmatized situations, and stigmatizing processes can affect multiple domains of people's lives. As a result, stigmatization probably has a dramatic bearing on the distribution of life chances in areas such as criminal involvement, financial status, housing, health, and life itself [43]. Another example of labeling is observed in news item-8 (Fig. 3) which has the headline of "the mother of the disabled in Yalova has spoken" [44]. The problematic aspect in this news item is turning the individual into "labeled object" by referring to the boy with bipolar disorder as "the disabled", which also reflects a reductionistic thinking and devaluation. This stigmatizing phrase as an attribute is discrediting by reducing a person "from a whole person to a discounted one", forcing the person into a rigid and devalued category [39]. News item-7, which is about the organization of the 51st National Psychiatry congress, also involves victim framing and passivity since those who committed suicide are referred to as "suicide victims" [45] (Fig. 3). This kind of wording with the noun choice "victim" suggests medical passivity due to the fact that the person is portrayed as a passive "victim" or "sufferer" rather than an agent in their own recovery. As a result, the focus is on tragedy and hopelessness rather than on recovery and management.

The last point to discuss based on the text analyses is sensationalizing and foregrounding the weirdness and bizarreness frame. News item-5 [46] states the headline as "Comedians are psychotic cases", whereas news item-6 [47] asks the question "Are comedians mentally ill?" (Fig. 2). The headline of the former news article is misleading, which could cause an association in the reader's mind about comedians and shifting the sensational aspect of the "mentally ill" toward a popular group, namely comedians. Finally, news item-9, with the headline "Weird illnesses of celebrities" describes the famous footballer David Beckham's obsessive compulsive disorder as 'weird' [48] (Fig. 3). This news item also reflects a stigmatizing frame since the "strangeness" of the behavior is highlighted. In fact, anyone could have this kind of disorder in his / her lifetime.

As the provided examples show, language and lexical choices in mental health news may be stigmatizing, discrediting or labeling, making dangerousness, victim and weirdness frames more salient.

4 Conclusion and Future Directions

Word choice needs to be considered carefully while writing about mental health, which can help reduce stigma in line with the suggestions posited by APA [49]. This could include focusing on the person rather than on the condition as the mental health condition is only one aspect of an individual's life. It has often been reported that media may contribute to mental illness stigma through the exaggerated, comical and inaccurate images used for portraying individuals with psychiatric disorders as well as providing incorrect information about mental illness [9]. The findings of the current study are in line with these considerations since the representative sample revealed that linguistic and lexical choices in mental health news can be stigmatizing, discrediting or labeling besides the salient frames of dangerousness, victimhood, passivity and weirdness. The language model and linguistic structure proposed in the current study can be used for standardization guidelines of language use within responsible, sensitive, humanizing,

pluralistic and holistic frameworks. It can be suggested that linguistic evidence be taken into account before preparing guidelines stipulating prescribed linguistic forms for discussing mental problems in the press. This related aim can further be steered toward other genres and styles of language used in different disciplines with comparative analyses, including education, finance, history, political science, and so forth.

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