



RESEARCH PAPER

Medical Discourse on Non-Alcoholic Fatty Liver Condition: A Contrastive Critical Discourse Analysis of Dietary Recommendations of Medical Associations and Research Articles

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ABSTRACT

This research aims to investigate the use of discourse by medical associations and in research articles through Van Dijk's Semantic Macrostructure Rules of Critical Discourse Analysis. This study is qualitative in nature and the data has been collected from eight research articles and six top medical associations related to a dietary disease: Non-Alcoholic Fatty Liver Condition. Van Dijk's macrostructure rules have been applied on the dietary recommendations only, suggested by the selected medical associations and research articles. The data has been analyzed by using the categories defined by Van Dijk i.e., Generalization, Deletion, Selection and Construction through AntConc to find and contrast the frequencies of particular terms. Results have revealed that there is more generalization and deletion as medical associations omitted the specific details in their discourse while the research articles are selecting jargons of medical for the construction of discourse. There is more cohesion and coherence in the discourse of research articles, but the medical associations are constructing an ambiguous or generalized discourse to hide the information. As a result, with the support of capitalism, medical discourse of associations has been badly influenced.

KEYWORDS Non-Alcoholic Fatty Liver Condition, Medical Discourse, Capitalism, Van Dijk's Macrostructure Rules

Introduction

Medical discourse has been an emerging theme of exploration for many years. In the last few years, the subject matter has been investigated in several branches of Linguistics. Different well-known journals i.e., English for Specific Purposes, LSP and Professional Communication, The Annual Review of Applied Linguistics, Historical Pragmatics, and Journal of English for Academic Purposes, are all concerned with the analysis and research in medical discourse. They all have been dedicated in publishing oral or written medical discourse and their related linguistic socio-cultural, diachronic, socio-historical, or cross-linguistics analysis.

According to Brown (2006), the second edition of the Encyclopedia for Language and Linguistics has a particular section named "Medicine and Language" which has combined different approaches and perspectives on the research area of medical discourse. It clearly indicates that the community and researchers of Applied Linguistics are focusing on the significance of analysis of emerging medical discourse.

Working on the discourse by studying language with all its forms and medicine collaboratively helps us to engage with culture as discursively constituted. Historical

practices that have been done in previous years focus on the aspect that medical discourse and its various forms have a very significant role in cultural reproduction, and production as well. It means that medical discourse is a very critical topic which has clearly and relevantly applicable impact (Cooper et al. 2003, Maynard & Heritage 2005, Roberts et al. 2005).

There is a diversity of research methods, approaches, themes, and forms of medical discourse that are so vast and have been emerging in the field of applied linguistics. But this study has only focused on the critical discourse analysis of the medical condition—Non-Alcoholic Fatty Liver Disease (NAFLD) and the related dietary treatments recommended by top medical associations and research articles. Van Dijk's four macrostructure rules i.e., Generalization, Deletion, Selection and Construction have been applied for contrastive analysis of the medical discourse of the dietary recommendations.

Literature Review

An overview of the theoretical and historical background of the study and reviews of previous research related to the study with the identification of research gap for this study have been made in this section.

Theoretical Background

Van Dijk's Semantic Macrostructure Theory

The term "macrostructure" was first used by Van Dijk in 1973, then this term was further emerged into a psychological concept of discourse understanding by Van Dijk and Kintsche (1983). A sequence of propositions created from a text can be made into macrostructures by applying macro rules like generalization, deletion, selection, and construction. These global structures provide the global meaning to the text. Semantic macro rules represent the global meaning of discourse. In order to relate microstructures with macrostructures, semantic mapping is used that are known as macro rules. There are two main functions of macrorule: first is to reduce and second is to organize the information. In this way, macrorules combine different sequence of propositions and the sequence of propositions is implied by the macrorules. And they create different macrostructures at progressively higher and global levels of semantic representation. Fundamentally, macrorules are used to transform microstructures into macrostructures.

According to Sadhegi (2013), macrostructure can be viewed as an overall summary or the broad description of the contents of its text. At the macro-level analysis, the themes of discourse are clearly explained and systematized by using the macrostructure. These themes are good examples of the key ideas in the discourse and they are of ultimate significance. It suggests that macrostructures are basically the semantic objects in discourse. As a result, these semantic objects are defined in terms of propositions which are further considered as the conceptual meaning of structure in the sentence (Van Dijk, 1980; Brown & Yule, 1983). According to Van Dijk (1988, p.31), "propositions are basically the small independent meanings that construct the thoughts and language that are usually stated by single sentences or clauses". It means that proposition is not an idea that can be simply conveyed by a word, but it combines with different propositions that are expressed through different clauses and sentences.

There are four macrorules to derive semantic macrostructures: generalization, deletion, selection and construction. The first macrorule is generalization in which sequence of different propositions and minor details are substituted by one generalization. The second macrorule is of deletion in the whole irrelevant information, local details and sometimes, full propositions are deleted from the text. The third macrorule is of selection in which there is a selected or particular use of proposition in the text. In this macrorule, the specific information of the passage may be eliminated if it has already been stated in the text

by a particular proposition that is also working as macro proposition. As in the last macrorule construction, we construct and build the information by combining and organizing the micro-information in the text at some macro level.

Historical Background

Language and Society

Language has always been seen as the medium to convey ideas, expressions, opinions, and feelings but now-a-days language has become an important tool that influences our social circle. Language has become a crucial aspect of life not only as a medium of communication but also as a tool that influences humans' thought processing.

In the whole world, language can be viewed as the primary means of communication among members of various cultures. Language serves as a tool that promotes comprehension globally because it is utilized to translate cultural values and beliefs of different nations (Sirbu, 2015). Philomina (2015) stated that language is a primary tool to carry out accurate and precise communication.

It cannot be overstated how language shapes, produces, constructs, and reconstructs the social realities in modern society. The people who speak different languages carry within them their historical background, societal norms and cultural aspects. Language is a reflection of a society in which a person lives. It provides knowledge about the norms, practices, linguistic patterns, beliefs and values that exist within a particular social circle.

Chamber (2007) stated that in the last decades, due to the focus on different approaches of communication and real-world interactions, a legitimate method for investigation and in-depth analysis of verbal, written and non-verbal communications in language learning and instruction has emancipated in the form of discourse analysis.

Language and Discourse

Language is a spoken or written form of expression while discourse includes the context and in depth meaning incorporated in the language in use. Language is not solely about the precise construction of linguistic structures rather it includes different meanings within it. These meaning can be best understood by analyzing the language on the basis of its context, which is the main concern in discourse analysis.

Rashidi and Rafieerad (2010) assert by elucidating the structural aspects and perspectives of language that in-depth analysis of the discourse is viewed as the broad field of study that is used to describe different linguistic characteristics and aspects carried by a communicator while collaborating in any communicative event.

The term "discourse" can generally be described as "talk or conversation" in both of the written and spoken forms. Discourse can simply be perceived as language in use (Brown & Yule, 1983; Cook, 1989). Linguists can have different types of approaches and methods through which they can interpret discourse or the written and spoken forms of language. Based on the nature of the topic, communication can be of different types like long or short, informal or formal, simple or complex and may be valid or invalid. Linguists' main concern is with the analyzing of words, phrases or sentences that the speakers use in a particular circumstance.

Discourse has various definitions and explanations. Discourse can be seen as a group of ideas or systematic way of thinking that may be identified in verbal and textual exchange of information and can be placed in different and broad social systems and contexts. In another definition, discourse is considered as a knowledge, belief or a practice that forms reality and provides us a shared way of understanding and interpreting the world. According

to Fairclough (1995), discourse is a specific way of establishing and constructing a particular domain of social practicing.

The term “discourse analysis” was first coined by the linguist Zellig Harris who used this phrase in his article “Discourse Analysis” that was published in 1952. According to him, discourse analysis is a particular tool to continue descriptive linguistics beyond the restriction of a single and simple sentence at a time (Harris, 1952). At the same time, different researchers have stated that developing a complete, comprehensive and acceptable definition of discourse analysis is difficult. That is why one way to simplify the concept of discourse analysis is to say that it is the analysis of discourse. Discourse can simply be considered as the language that is in use. So, the study of language in use can be known as discourse analysis.

In the 1960s and early 1970s, different fields and disciplines i.e., sociology, anthropology, linguistics, psychology and semiotics all have contributed in the development of discourse analysis. There are different scholars and their works that have either founded and helped in the development or establishment of discourse analysis. The work “How to do things with words” by Austin (1962) established or gave the way to the very famous theories i.e. speech act theory and social theory. Hymes (1964) provided a sociological approach on the study of speech. Austin’s work was further developed, and extended by Searle (1969).

Discourse analysis is an interpretation of the ways in which a communicator constructs the linguistic communication in order to share different perspectives, opinions and ideas and how the addressee operates different linguistic codes in order to make them comprehend (Brown & Yule, 1983). A discourse is an organized method of analysis that investigates and offers the spoken or written patterns in reference to the social boundaries. Discourse is inevitable as it has impacts and influences on how we interpret different things. The emphasis of discourse analysis is on analyzing the underpinning ideologies and beliefs that underlie the norms of a society as they are communicated through its language.

Language is not something of scientific significance only, but it is a moral and useful action made by the communicators in any interactive event as well. Language and discourse are interconnected and discourse is about language in use (Johnstone, 2000). Discourse calls attention to the systematic constructive aspects of the language. These different aspects of language are being emphasized in order to throw light on the sociocultural background and context.

These characteristics can be represented in conversations, different discourse patterns, socio-political speeches, verbal and non-verbal text, hedges, pauses, stops, paralinguistic features and speech errors as well. These characteristics are of great significance because the contexts of all these aspects lessen the difficulty of analysis by enhancing the accuracy of the in-depth scrutinization (Osoba & Sobola, 2014).

Different ideologies and identity patterns are reconstructed and reproduced in discourse in the in-depth scrutinization of discourse. And the linguists who are in the in-depth scrutinization of discourse, investigate that aspects of different structures of language which are utilized to attain their social aims.

The analysis of language that has incorporated discourse investigation includes the ethnographic technique to make socio-cultural perspectives of the spoken or written language comprehensible (Wennerstorm, 2003). The linguists who analyze the discourse focused closely on the aspects of language used by different collective groups in different social contexts. They elucidated the construction patterns and several features that incorporated in encoding and decoding of the in-depth meaning and the formal language aspects. It is the same idea described by other researchers in the same field (Osoba & Sobola, 2014). Communicative events are being addressed in discourse analysis along with the contextual features as the primary language is used to transmit a lot of information in

various social, political and cultural domains as described by Tarbizi et al. (2014). To put it on another way, it can be contended that the analysis and the in-depth investigation of the discourse is not restricted to a single field of study because it can be used to any event or environment under different circumstances with a portrayal of different socio-cultural ideologies and identities (Martinez, 2014).

Discourse and Social Norms

Kellner (2003) stated that language has been used to manipulate the social norms, ideologies, identity, living patterns, different perspectives, thought processes, perceptions, opinion, ideas and also to construct different stereotypes through the use of different modes of communication and entertainment. In order to elucidate the hidden ideologies incorporated in different linguistic patterns, we should go for discourse as it highlights the context and provides background knowledge about any communicative event. Furthermore, Machin and Thornborrow (2003) argue that discourse transcends the borders of mere political communicative events. It does not incorporate only the analysis of the speeches of different politicians rather it involves different socio-cultural factors manifested in different manners of everyday life either in the entertainment industry through the portrayal of films, theater, fictions or in the daily life proceedings.

It has become a common notion that discourse is concerned about the socio-cultural background of the people and the circumstances involved in an event as context is most significant in conceptualizing the discourse. In order to shed light on the underpinnings of a society's cultural beliefs and values it is important to analyze the discourse of the study. Language and its discourse can only describe the habits, beliefs, values and norms of a society. Discourse analysis reveals the conceded realities by throwing light on their sociocultural beliefs, values and norms and all by going through the language of the society they are living in. Discourse helps to create social identities, connections and relations in order to drive interpretations from linguistic and contextual knowledge (Wodak et al., 2002).

Potter (2004) stated that discourse analysis of a spoken or written text depicts that language is an abstract concept with the inclusion of different linguistic structures, grammatical features and syntactic rules is not the main concern. Discourse is a platform for communication thus the study of discourse leads to the study of human behavior about how a human behaves under particular social norms.

Critical Discourse Analysis (CDA)

Critical Discourse Analysis is a multi-disciplinary field of knowledge that draws upon different fields of study. Fairclough & Wodak (1997) stated that social issues are the main concern of critical discourse analysis. Critical Discourse Analysis calls attention to the power relations, ideologies, societal norms constructed by the language people used at different events under different circumstances.

Van Dijk (2001) illustrates that Critical Discourse Analysis is a kind of discourse interpretation as it studies the language and reflects the abasement through power, hidden cognitive ideologies, political and gender dominance. Text is reconstructed within different backgrounds, social, political and cultural context. Critical Discourse Analysis takes a clear stance and aims to comprehend, reveal, and ultimately resists the societal inequality.

Hegemony can only be questioned by the reconstruction of the power relations that are in crisis (Fairclough, 2006). Different researchers adopt the stance in describing CDA as a method rather than an approach because it incorporates several approaches in it to investigate power relations, identity, socio-cognitive patterns, cultural norms that are found in the linguistic patterns or language of a society (Rogers, 2004).

Understanding of language as a social practice and its context is a very crucial component in Critical Discourse Analysis (Wodak & Meyer, 2001). Fairclough (1993) stated that Critical Discourse Analysis reveals peculiar interactions between various socioeconomic and ethnic groups. Text is connected to a sociocultural background of the speech taking place on an event under any circumstances and it discloses unequal ideologies shaped by unequal distribution of power and power relations.

Carroll (2004) believes that critical discourse analysis serves as both the theory and a method which provides different dimensions and numerous aspects for the in-depth analysis of a spoken or written text. Discourse analysis incorporates contemporary perspectives on different social, cultural and political aspects. Language's functional aspect in the development and justification of social interactions is a sociological trait. By the evaluation of the pertinent researches and studies, it becomes obvious that different academic scholars and researchers have omitted cognitive techniques from the field of CDA for frequently illogical reasons. Wodak (2006) contrarily argues about a great benefit that elucidates the social and cognitive theories by using it as a framework.

This perspective is illustrated in a research that has been conducted on the comprehensive legibility of the discourse patterns and prejudice. It is contended that different cognitive theories and methods have significant boundaries and restrictions that must be taken into consideration which particularly advocates to bring change on social merits by building upon logical reasoning and cognitive perceptions. These points have been emphasized using illustrations from the current immigration related political discussions in the US election campaign.

Medical Discourse

We confront the culture discursively by studying the language with all of its forms and medicine together. Discourse has a very significant role in medicine field (medicine) and medical discourse basically defines as the discourse which deals with therapies, healing, cure, expressions of pain, or some related language ideologies. The topic of medical discourse is very remarkable that has relevant practical importance (Cooper et al. 2003, Maynard & Heritage 2005, Roberts et al. 2005).

Beginning in the 1960s, there were two streams of medical discourse: one was micro analytic that is US based (*The Natural History of an Interview* project; Condon & Ogston 1966, Schefflen, 1973), and the other stream was macro analytic (Foucault, 1978). Qualitatively and quantitatively oriented whose main focus is on sociology have worked on the discourse related to therapies (Labov & Fanshel, 1977), Aranguri et al. (2006) have worked on the translation in social multicultural encounters. The relationship between the specific medical concerns has been investigated by Hamilton (2004) through motivating the doctor and patient discussion.

Roberts and Sarangi (1999) have worked in collaboration with the Royal College of Physical Practitioners to get understanding of the medical discourse and the analysis from the insights of medical discourse has been applied to improve the doctor-doctor interactions and to train the doctors. Patients, practitioners, immigrants and nonimmigrants all can be benefitted from such kind of collaborative work. However, immigrant patients, sometimes, face difficult to tell their problem to practitioners during clinical sessions (Jefferson & Lee 1992, Wilce, 1998). As a result, "training for uncertainty" (Fox, 1957) must be taken into consideration for handling and managing the "interactional uncertainty" (Roberts et al. 2004) in multi-ethnic societies.

Analyzing the relationship between medicine and discourse can have different aspects which may be mentioned such as the therapeutic discourse or discourse related to disability (Hadder, 2007), the conjoining of healing, music and discourse (Roseman, 1991), laughter as a resource of suffering for patients (Haakana, 2001), and the representation of

conversation or talk is itself also a reason of mental illness (Ribeiro, 1994; Desjarlais, 1997; Wilce, 2004a, b). Medical discourse itself has an impact that can create, maintain and preserve the interests of specific hegemonic groups (MacDonald, 2002, p.464) and it also depicts the ideologies regarding language that discourse on illness and health can be present everywhere.

Unfortunately, most of the previous works on medical discourse are just limited to medical concerns specifically the patient-doctor interaction conversation in particularly medical settings and give the suggestions to improve the communication between them by developing “patient-centered” or “biopsychosocial approach” (critiques by Kuipers (1989) and questions by Cooper et al. (2003).

On the basis of reviewed literature, it has been found that researches on medical discourse specifically on the medical texts and the dietary diseases are very less and it is a neglected research area all over the world. Therefore, this study has attempted to fill the gap by contrasting the dietary recommendations of medical associations and research articles regarding the disease, Non-Alcoholic Fatty Liver Disease (NAFLD), by applying the Van Dijk’s Macrostructure Model of critical discourse analysis through four macro rules i.e., Generalization, Deletion, Selection, and Construction.

Hypothesis

The study hypothesizes that Medical Associations omit the details of dietary treatments of NAFLD and mostly give the general statements regarding recommendations to hide the western lifestyle, their dietary patterns, the sponsorships of different companies/organizations and food industries.

Material and Methods

The current study has dealt with Van Dijk’s Macrostructure model of critical discourse analysis. This study is qualitative in nature and texts from two sources have been analyzed comparatively. The data for the present study has been collected from medical research articles and top medical associations on the dietary disease “Non-Alcoholic Fatty Liver Condition”. Eight research articles have been randomly collected from the well-known journals published in the years 2015 to 2020 and top six medical associations named American College Gastroenterology, Medline Plus, World Gastroenterology Organization, American Liver Foundation, Harvard Medical College and MayoClinic. The dietary recommendations have been purposively selected on the same dietary disease. Macrostructural analysis has been done on the content of these selected dietary recommendations by using Van Dijk’s macrostructure rules to find the gap between the discourse of medical associations and research articles.

The data has been analyzed by using the categories defined by Van Dijk i.e., Generalization, Deletion, Selection, and Construction. Antconc has been used to find and contrast the frequencies of particular terms related to four macrostructure rules and the results have been presented in tabular form.

Results and Discussion

The contrastive analysis of discourse of dietary recommendations in research articles and by medical associations has been done under the principles of Van Dijk’s macrostructure model of critical discourse analysis by following four macrostructure rules of text i.e., Generalization, Deletion, Selection and Construction.

The following tabular representations show the contrast of the terms suggested by medical associations and research articles in terms of the specified macrostructure rules of text.

Generalization

As Van Dijk (1986) stated that the generalization refers to the process of reducing and abstracting the details by using such words that are more general. By applying this macrostructure rule on the discourse of dietary recommendations of both the medical associations and research articles, it is revealed that medical associations are using more generalization to recommend dietary treatments regarding non-alcoholic fatty liver condition.

Table 1
Compared Frequencies of Generalized Terms in Medical Associations and Research Articles

Terms (Generalization)	Medical Associations	Research Articles
may	8	4
various	1	1
studies	3	15
most of the	2	0
healthy/balanced diet	5	2
exercise	7	2
individual	1	1
general	6	5
lifestyle changes	6	3
fatty liver	10	6
plant-based Diet	4	1
weight loss	10	6

In table 1, it is shown that frequencies of generalized terms in medical associations are higher than the terms in research articles. Medical associations are using more general terms (as given in the first column of the above table). These all terms indicate that associations are replacing the main information by using the super-ordinate concepts and terms. They are abstracting the pertinent' details like "which diet we should take?", "for how much time, we should exercise?", or "what kind of exercise (aerobic or anaerobic) we should do?", "how we can modify our lifestyle to cure the disease?", "which kind of fruits and vegetables will be in plant-based diet to make the liver healthy? and how much weight loss will be preferred for different individuals?. They are suggesting dietary treatment generally to all the individuals who have this disease by using the terms like "individual", "general" and "most of the" not specified for different patients. The research articles, on the other hand, are building their discourse by using less general terms because they are emphasizing on the specific details which the medical associations are generalizing or abstracting. By following the above tabular representation, only the term "studies" has highest frequency regarding generalization in research articles because they are focusing on giving the references of different studies regarding dietary treatments of the disease.

Medical Associations are building their macro proposition in such a way that replaces the minor sequence of propositions by one general term as a whole i.e., "Eat a balanced diet", "Exercise most of the days of week", "Lose weight", "Choose a healthy diet" or "Lifestyle changes". Comparatively, the research articles are focusing on that language use which provides the particular details about every minor thing which is related to non-alcoholic fatty liver condition. Basically, medical associations are just focusing on the global meaning of their dietary treatments' discourse by abstracting the details and substituting with more general terms. It seems that a gap is left behind in the discourse of medical associations as they are not clarifying the things and they are giving a way to the people to interpret the discourse in their own way but the research articles are not leaving a gap in building of their discourse by using less generalization.

Deletion

As the Generalization rule abstracts and generalizes some information, the macrostructure rule- Deletion focuses on deleting the irrelevant sequence of propositions and the local details (Van Dijk, 1986). The analysis of the discourse of the dietary recommendations of the sample has revealed that medical associations are deleting the terms and information more as compared to the discourse of research articles.

Table 2
Compared Frequencies of Deleted Terms in Medical Associations and Research Articles

Deleted Terms	Medical Associations	Research Articles
Evidences [The European Association for the Study of the Liver (EASL), American Association for the Study of Liver Diseases (AASLD)]	0	14
Body mass index	0	2
Excess fructose consumption	0	16
Soft drinks/ beverages (Coca cola)	0	8
Calorie intake	1	3
Quantity of alcohol intake (>20g/d..)	0	9
Physical activity (Duration)	1	10
Mediterranean diet	1	15
Western/American diet	0	2

The above table evidently conveys that medical associations are frequently using Deletion in their sequence of propositions. All the above information i.e. “evidences about different studies and associations”, “details about body mass index”, “excess fructose consumption”, “taking soft drinks/beverages”, “calorie intake”, “quantity of alcohol intake”, “duration of physical activity”, “Mediterranean diet” and “Western/American Diet”, in table 2 indicate that these are majorly missing in medical associations while the research articles are frequently using these terms. Medical associations delete the information about time duration for doing physical activities, not to take sugary soft drinks or beverages like Coca-Cola, to avoid fructose content meals and drinks including processed foods, tonic and sodas, to follow the Mediterranean diet rich in fibers, to count the intake of calories and nutrients, to maintain check and balance of alcohol consumption for different individuals. Research articles, while suggesting dietary recommendations, emphasize on providing all the information regarding the disease so that the patients can get maximum benefit and there is no chance left for the misinterpretation of discourse. From frequency mentioned in the table, it can be perceived that mostly medical associations have deleted the information or hid the important details about dietary treatments but the research articles focus on developing the strong macrostructure that nothing is irrelevant—every local detail is important.

As it is observed that research articles are providing the evidence about different cross-sectional studies and the guidelines suggested by top associations like Italian Association of Study of Liver (IASF), American Association for the Study of Liver Diseases (AASLD), European Association for the Study of Obesity (EASO), and European Association for the Study of Diabetes (EASD) while the medical associations are omitting such references about guidelines. It seems that associations are omitting the details intentionally because they are hiding the Western lifestyle and the American Diet whereas research articles are arranging the different propositions to build a macroproposition that by following Western Diet, chances for the development of NAFLD are more because it includes the hypercaloric diet in which there is a low intake of fruit, vegetables, grains, legumes and low-fat dairy products and there is a high intake of processed foods, alcohols, sodas, red meat, high-carbohydrates meal, snacks, beverages, eggs and butter. It can be seen that this all

information is deleted in medical associations' discourse because there can be different sponsors, brands and organizations behind it that have the aim to promote their products. As research articles have mentioned that use of Coca cola, sodas, or beverages should be avoided but the associations have kept this information secret because the companies may be sponsoring the associations to encourage the use of their products. This semantic macrostructure can relate with Capitalist theory (Chun, 2017) that the capitalism has given the freedom to so-called Western countries. It has brought freedom to Western Countries regarding freedom of free market, freedom of democratic choice, freedom of free/private enterprises to promote their lifestyle and habits regarding everything. In this way, medical associations are manipulating their discourse by omitting or deleting the pertinent information.

Selection

By applying the third macrostructure rule—Selection, it is disclosed that selection of vocabulary is so different in both the medical associations and research articles. To build the macro proposition in the discourse of dietary recommendations, some microstructures have been processed into it. For this purpose, the vocabulary used by medical associations and research articles has been analyzed. It can be seen in table no. 3 that research articles have selected more specific vocabulary related to the disease while the associations select such words that are more general and anyone can interpret them in his own way. They are less focusing on the vocabulary that is related to medical field.

Table 3
Compared Frequencies of Selected Vocabulary in Medical Associations and Research Article

Terms (Selection)	Medical Associations	Research Articles
Mediterranean diet	15	1
Carbohydrates	7	0
Processed foods	10	4
Fibrosis	10	3
Grains	6	2
Coffee consumption	18	0
EVOO	4	2
Cardiovascular	1	7
Alcohol consumption	23	0
DASH diet	2	3
Sugar Intake/ Sugar Diet	7	0
Insulin Resistance	6	1
Aerobic Exercise	1	0
Nomo-caloric Diet	1	0
Hypo caloric Diet	2	0
Fatty acids (monounsaturated, trans, unsaturated...)	10	0

It is revealed that articles are using such words in their discourse that are contextual to the disease non-alcoholic fatty liver condition that are Mediterranean diet, carbohydrates, fibrosis, grains, coffee consumption, EVOO (extra virgin olive oil), cardiovascular factors, alcohol consumption, DASH diet, sugar diet, aerobic exercises, Nomo-caloric diet, Hypo caloric diet, trans fatty acids, monounsaturated and unsaturated fatty acids. That is why, frequencies of selected vocabulary related to disease are higher in research articles instead of medical associations. Medical associations select more general vocabulary to create the semantic macro proposition that they are abstracting and generalizing to create a gap for the people in the interpretation of discourse. As it is mentioned that they use such words that are too general like “exercise”, “balanced diet”, “plant-based diet”, or “healthy weight

loss" instead of DASH diet or Mediterranean diet, or aerobic exercise to form a generalized macro structure. In this way, medical associations and research articles are using the macro rule – Selection in their discourse.

Construction

According to Van Dijk (1986), in the macrostructure rule – Construction, we construct a new macro-proposition on global level by combining and organizing the micro-information in the text to maintain coherence and cohesion among the ideas. By applying this macro rule, it is shown in table 4 that research articles have constructed their discourse in a more coherent way and they use linking words and phrases to combine the micro-propositions in the text and the frequencies of such words are higher in research articles instead of medical associations.

Table 4
Compared Frequencies of Construction Terms in Medical Associations and Research Articles

Terms (Construction)	Medical Associations	Research Articles
However	9	2
In addition to	2	2
While	4	1
Similarly	1	0
Moreover	4	0
Especially	5	1
interestingly	1	0

As it is observed that research articles use linking terms between the clauses like "however", "in addition to", "while", "similarly", "moreover", "especially" and "interestingly" to construct the global meaning of the text by arranging the micro propositions which can work as a whole.

There is more coherence and cohesion in written expression of the research articles because they provide whole information step by step. For example, "However, the vast majority of patients", "In addition to the role of foods in the diet" or "Moreover, certain dietary changes like Mediterranean diet" - these all are indicating the coherence and cohesion in the discourse of research articles. Figure no. 4, reveals the terms which create cohesion and coherence are less in medical associations because they used simple sentences by providing the general information or giving the recommendations in bullet points to build a generalized macro position. In this way, construction of discourse is little bit different in both medical associations and research articles. Research articles constructed their discourse by making connections in the information to make the strong macro-proposition, comparatively the medical associations are constructing their discourse by abstracting and reducing the information to make global meaning of the text more general. This is how the construction varies between the discourse of medical associations and research articles.

Conclusion

In view of the hypothesis the study has been based upon, it is obvious from the findings that the medical associations omit the information and the local details to hide the Western lifestyle and dietary patterns because they are bound by the sponsorships of different companies and brands. Following the paradigm of critical discourse analysis, the selected medical associations and research articles were analyzed by using Van Dijk' macrostructure rules (generalization, deletion, selection, and construction). Hence, it is observed that hypothesis is proven true as there is more deletion and omission of pertinent details in the recommendations presented by medical associations. It can be seen that associations are keeping their information secret by abstracting the details and making them

too general so that, they can hide the sponsors behind this approach because they are helping the brands and sponsors to promote their products and funding the associations. Like, hiding the information about avoiding the use of soft drinks like coca cola, tonic and soda etc.

In the case of research articles, they are building their macro-proposition by providing adequate details about each recommendation. Less generalization has been done by research articles because of their focus on the aspect that every information is important and nothing is irrelevant whereas medical associations replaced the sequence of important details by using generalized propositions. This is the reductive nature of macro-rule of generalization that abstracts and deletes the essential details from their discourse.

Moreover, the selection of vocabulary differs to a great extent in the dietary recommendations of medical associations and research journals. As the research articles take deeper consideration into micro-propositions also, it has been noticed that they use such vocabulary that provides the evidences about guidelines. Their use of vocabulary is not ambiguous like in medical associations such as “may”, “most of the studies or “various diets” etc. They are giving references about studies or if they followed the guidelines of advisories/ associations, they have also mentioned their names to make the information authentic. It is revealed that research articles and medical associations have selected the vocabulary in their own way. Research articles focused on using the jargons of medical to build their discourse such as “DASH diet”, “EVOO”, “Mediterranean diet”, “Fibrosis”, or “Nomo-caloric diet” while the associations selected such vocabulary that anyone can understand like “Plant- based diet”, “Exercise” etc. Articles paved the way to interpret the discourse clearly with the context of medical field but the associations hid their aims and purposes behind their language use.

It seems that construction of discourse varies among research articles and medical associations. As the research articles constructed the discourse through combination and organization of the small micro-propositions by using cohesive devices like “moreover”, “in addition to” “especially” or “however” to extract the global meaning of recommendations so they are more cohered. Whereas associations are constructing a more generalized macro-proposition in which the micro-propositions or sequence of micro-information are deleted. The reason behind deletion and generalization of propositions is the support of capitalism. As capitalist theory reflects the medical discourse in the way that food markets have also been globalized, politics and economics are involved everywhere in any field due to which business associations truly sponsor the food markets and the medical health associations. If medical associations restrict anything regarding the processed foods, these businesses may decline and they cannot afford such losses. According to capitalist theory (Chun, 2017), businesses are made for profits and that is why, they sponsor the national and international medical associations. This is the reason for the ambiguous, reductive and the generalized discourse of associations. As a result, this capitalism is badly influencing the medical discourse.

Finally, all these four macro-structure rules have been repeated as many times as possible to represent the main proposition or schema of the texts. So, the study has critically analyzed the level of macro-structures that have been derived from micro-structures by abstracting and summarizing specific details.

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