



A CRITICAL ANALYSIS OF OBJECTIVITY CLAIMS IN MEDICAL DISCOURSE: UNVEILING POWER DYNAMICS AND LANGUAGE MANIPULATION

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Abstract

This study examines the use of scientific language in the medical field and questions its claim of objectivity. The researchers conducted a qualitative analysis using the Van Dijk model to analyze the language and discursive practices of different medical domains, such as associations and research papers. The analysis focused on the impact of diet on cardiovascular diseases (CVDs). The researchers analyzed eight medical research papers and four association guidelines, including those from WHO, AHA, HFSA, and ESC. At the meso level, the researchers examined the ideology behind both the associations and the researchers and found that the discursive practices of the associations had more authority. At the macro level, the researchers analyzed the global meaning of the associations' and researchers' texts and how power influenced this meaning. The analysis concluded that associations used authoritative and direct language, while researchers' language was more generalized. However, this generalization raised concerns that associations may omit important information due to personal agendas or political and social advantages. The study raises questions about the objectivity of scientific research. It also highlights the need for future research to further analyze the objectivity of scientific language and uncover any hidden agendas that shape it.

Keywords: *discursive, Cardiovascular, associations, generalized.*

INTRODUCTION

Critical Discourse Analysis (CDA) and Discourse Analysis examines language in a social context; they are similar. However, CDA differs because it explains and examines how various institutions use facts, power dynamics and abuses, societal or political dominance, and language use to carry out actions. Additionally, CDA reveals how people behave in various circumstances. Consequently, this distinction sets CDA apart from DA, which is defined as:

Critical discourse analysis, according to Dijk (2001), is a field of research that examines how conversation and text in a socio-political setting reproduces social inequity, abuse of power, and dominance. However, CDA has a crucial role in the context of research since it contributes to the comprehension and exposure of the phenomena of inequality, racism, and oppression.

Van Dijk also introduces the CDA model, which includes the macro, micro, and meso text and conversation structures. Nevertheless, the mesostructure, also known as the superstructure, connects the micro and macro structures. These three levels function as a single, cohesive unit.

We examine verbal interaction and communication in a social setting at the micro-level using linguistic analysis. Additionally, macrostructure aids in a comprehensive comprehension of the text (Dijk, 1980). Analyze social power, inequality, and domination between various social groupings at the macro level.

According to Van Dijk (2001), there are various explanations for the different kinds of power institutions, including military power based on force, rich power based on money, and knowledge-based power held by parents, academics, institutions, and organizations. A group becomes

dominant through the use of power, and this hegemonic power is subsequently incorporated within the laws, regulations, norms, and customs.

In CDA, control is the definition of power. According to Mayr (2008, as referenced in Dijk, 2015), the degree to which groups have the ability to influence other groups' behavior and thoughts depends on their level of power. This defines power as having access to important social resources, including force, money, fame, and prestige, education, and culture, as well as a variety of public discourse and communication techniques.

However, this is how this The goal of CDA is to analyze the power discourse that shapes the beliefs and behaviors of less powerful groups, as well as the societal effects of this control and the characteristics of the discourse of institutions and organizations that represent powerful groups, and how these characteristics contribute to power abuse.

By using CDA, we can forecast how strongly or easily strong intuitions will influence the text. It also aids in foreseeing the manner in which influential institutions dominate the text and speak and explore the mind? control, another oblique kind of dominance. Controlling intentions, plans, information, attitude, and ideologies through dialogue. The socio-cognitive method of CDA, which explores the social structure of power via the study of the connections between discourse and cognition, is related to this discourse.

These features are present in every institution, including medical institutes, though. Doctors, researchers, and organizations that offer guidance for various diseases are the notable figures in the medical field. However, each of these prominent individuals is connected to the others in the medical field, and they all possess the authority to potentially influence a wide range of facts.

The goal of the current study is to examine how medical associations and researchers use language when describing illnesses and treatment recommendations. The study investigates how both facts and overall meaning is communicated through conversation. Additionally, CDA will look at which medical group has greater authority than the other? It will make the reader more aware of the fact that social power can be locally exercised for the benefit of other group members as well as used to dominate other institutions.

RESEARCH OBJECTIVE

It is thought that language might convey objectivity in research, the study examines scientific language. In order to uncover the unique characteristics of scientific language and to examine the persuasive discourse within a set of related fields, qualitative analysis is used. Furthermore, they base their communication of meaning on the notion of power as control.

In order to identify the discursive practices, the manner in which assertions are presented, and the overall meaning of the selected research papers and guidelines from the medical organization, the current study examined both sets of data. Van Dijk's macrostructure and mesostructure CD models will be used to the study of scientific language.


The mesostructure evaluates who has authority over whom and identifies the ideologies driving the discourse of the association and the researchers. The macro structure, which is based on the mesostructure analysis, provides the overall meaning of the data while taking each field's ideology into account.

Research Questions

The following research questions require identification of the Van Dijk macrostructure and mesostructure.

Meso-structures

1. How does language terminology used in medical associations and research reflect objectivity?

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2. How does the discourse of associations and researchers connect to certain discursive practices?
 3. Which field is more authoritative than the other in terms of practices?

Macrostructure

What keyword categories display construction, deletion, or generalization?

2. How do academics and organizations use generalization in their assertions?
3. How do associations and researchers use construction to support their assertions?
4. How do associations and researchers pick and delete evidence from their claims?
5. What general message are both medical sectors attempting to convey?

LITERATURE REVIEW:

CDA and Language of Science

The concepts of power and ideology within discourse are better understood with the aid of critical discourse analyses. The use of rhetoric, irony, or mitigation advertisements to manipulate language is fairly widespread. Our ability to assess these discursivities practices is aided by CD analysis. Objectivity is referred to as a crucial component, particularly in scientific language. There is some skepticism, nevertheless, particularly in the field of medicine, that those in positions of authority and control might falsify or embellish their assertions. Past researchers have examined this manipulation using scientific terminology.

The subjective experience of obesity and anorexia nervosa as constructed by women's magazines is analyzed by Whitehead & Tim Kurz (2008). For the analysis, a feminist poststructuralist perspective is used in the Foucauldian Discourse Analysis. Discursive Constructions, Discourses, Action Orientation, Positionings, Practice, and Subjectivity are listed as the six analytical stages that the researchers claim the analysis is built on. The study looked at how magazines portray anorexia nervosa and fat.

The findings pointed to three discourses: a discourse about medicine, a narrative about victimization, and a discourse about control. The study came to the conclusion that speech connected to anorexia was surrounded by a discourse of control, a discourse of victimization, and a discourse of medicine. This suggests that anorexia renders women helpless, but paradoxically it is also viewed as powerful since it brings them closer to cultural standards of femininity than obesity.

The discourse surrounding obesity, on the other hand, includes a medical discourse, a discourse about lack of control, and a narrative about unrealized femininity. In these discourses, women are portrayed as weak, culturally and morally harmful, and deviant from the norms of femininity. Looks like Obesity is unpleasant, yet anorexia is still preferred.

The study claimed: "It may be the reason these magazine stories about anorexia are framed as medical and as a separate entity from the 'victim' in order to maintain the media's ability to air commercials with noticeably thin models, publish articles on dieting or exercise routines, and normalize anorexics themselves."

Mulderrig (2016) chose the British obesity awareness social campaign, change 4 life. This campaign uses cartoons and concise messaging to highlight the obesity problem and motivate people to get involved in finding solutions. Interdiscursivity and intertextuality are found using Fairclough's dialectical-relational approach, which also identifies other characteristics of the particular text as well as conventionalized patterns of communication based on sociocultural, political, and economic norms and values.

The study examines the campaign's advertisements and policy materials and finds that these scientific claims about obesity are reframed, sped up, and misrepresented. It is further stated that

behaviorism might be used to justify tailored governmental responses rather than open discussion of the multifaceted causes of obesity.

Flat (2013) looked analyzed a language sample from the Friends of Science in Medicine media, a special interest group with roots in biomedicine. The research's objective is to examine the claim that power and ideology are linguistically generated and employed to portray complementary medicine. The study focuses on the claim made by FSM that university-level courses in alternative medicine ought to be scrapped because they are not founded on scientific theories or data.

According to the researcher, three key aspects can be seen from the examination of the FSM statement: These emphasize the practice of medicine, the needs of the patient, and the distinction between biomedicine and complementary medicine. Based on these elements, the study came to the conclusion that FSM argumentation contradicts the literature in how they see and use supplementary medicine. Furthermore, FSM show ideology and strength through their rhetoric.

FSM statements also seek to distinguish between what they define as scientific biomedicine and non-scientific alternative medicine. They offer evidence-based linguistic style and label medicine as a pseudoscience. According to the researcher, their comments show how marginalization is being discussed. Additionally, the wildly disproportionate comparisons and pre-trial beliefs that undermine objectivity toward the evidence lead one to distrust FSM statements.

CDA and Medical science


Chinaleong-Brooks' (2005) study looks at the important policies and reports that British Columbia uses. These studies only include methods for preventing and treating obesity. Additionally, the study shows that provisional administrations pledged to incorporate population health and inequities perspectives into actual methods and public health intervention initiatives. However, the study uses CDA analysis to assess these reports. This analysis will evaluate how various health frameworks are used to guide the creation of strategies for the prevention and treatment of obesity. Additionally, the researcher explains the findings and offers suggestions to the interim administration in order to lessen the disparities that British Columbians encounter.

Finally, the researcher came to the conclusion that obesity prevention programs in BC are not being guided by a single formal policy statement established at either the federal or provincial level. Despite the fact that they advised by mentioning two important reports: Promoting healthy weights may serve as a roadmap for future provincial obesity policies in A Strategy for Combating Childhood Obesity and Physical Inactivity in British Columbia and Improving the Health of Canadians.

Greenhalgh and Shaw, 2008 Conduct a study on England's primary care research policies. The study will shed light on the social background of the policies in the perspective of Foucault and Parker's work. They explicitly examine the policies using Parker's paradigm, a post structuralist approach. This in-depth study looks into the development of these health care policies and its social, political, and historical roots. The study rejects the notion that health research policy is an attempt to be value-free.

They came to the conclusion that the "knowledge-based economy" discourse influences health research policies. The researchers advise readers to form their own opinions on this phenomena based on their own research and experiences with current healthcare practices, but they acknowledge that these health care policies are dynamically changing and reshaping based on prevalent discourses.

Dahl et al. (2014) examine the Norwegian Ministry of Education and Research's public health nursing curriculum. The dominant discourse and social practices are highlighted in this linguistic study of text analysis to uncover government policies and to offer recommendations for how public health nurses should promote health and avoid diseases. The researchers performed an interdiscursive investigation of several representations of health promotion and illness prevention discourses using critical discourse analysis.



The outcome demonstrates that biological knowledge is the dominant discourse in the curriculum and also identifies the rivalry in knowledge-discourse between biomedical and social-scientific knowledge. Even though the material appeared to encourage user interaction, the researchers ultimately came to the conclusion that the curriculum's primary audience is children, their families, and young people. Additionally, the curriculum paper does not adequately represent the recent health-promotion of "New Public Health." Finally, the researchers proposed that the public health nursing curriculum needs to be updated in order to comply with the most recent political demands for health promotion. Yang et al. (2020) On the basis of the political and social background, the study investigates using critical discourse analysis. The study identifies the ways in which text and conversation accept, justify, and reject social-power abuse and inequality. For the analysis, the researcher explicitly used the Fairclough technique. Through this lens, researchers look on non-communicable diseases. Governmental technology and political reason. Additionally, a review of policy suggestions for NCD prevention and control was used to pinpoint various political rationalities or governmentalities, as well as their point of view.

Most of the documents in this collection came from the UN, WHO, and WHA. Though just a small number of organizations are represented in the documents But they can be divided into three groups: technical prescriptive documents, technical descriptive documents, and technical political publications. The researcher concentrates on concepts like governmentality, pastoral power, discipline, liberalism, Neoliberalism, and risk based on these sources. According to the study's findings, the government must develop a wide range of technologies and be receptive to a wide range of political justifications in order to implement a comprehensive NCD plan Mackenzie and Murray (2021). Applying Foucauldian discourse analysis, we compared and contrasted several discourses about the results of healthy eating. They also look into the power dynamics between institutions and the British public as well as how individuals positioned themselves in relation to these discourses. The study was built on a wide range of texts from information producers with various driving motivations. The National Health Service's "Eight tips for healthy eating," Public Health England's "The Eatwell Guide," and two commercially available books on healthy eating that are linked to specific food items were the sources of the information for the CDA.

According to the researchers' detailed investigation, women are more attracted to weight loss commercial enterprises than men. Assuming that unhealthy eating is a habit carried out by choice or ignorance—here, ignorance is defined as a lack of nutritional awareness—the text also implied that people are ultimately accountable for their own health and that this is one of the causes of poor health. Therefore, educating people through medical and scientific discourses would be the best way to modify food-related behaviours. However, additional environmental factors that may have an impact on people's health and dietary decisions are not mentioned in the text. These power dynamics show how health state institutions have positioned the general public as in need of instruction while ignoring the structured circumstances in which people live, which may be the cause of their incapacity to consume a healthy, balanced diet.

The researchers came to the conclusion that literature on healthy eating has significance and benefits a number of different organizations in our society. The researchers further stated that people should be free to accept or reject the topic perspectives put forth by those discourses and that health experts and policy makers should take into account other environmental factors that may have an impact on a person's health.

McGannon and Gonsalves (2018) For the purpose of conducting a critical discourse analysis (CDA) of Facebook messages, the study examines a US nonprofit organization on Facebook. Researchers look at early to mid-2000s US media messaging and study institutional power relations in the interactive digital era. Women's Heart Alliance (WHA) is this nonprofit organization, and the researcher examines conversation surrounding this group and independent public Facebook users to show how to form identities related to cardiovascular health, disease, risk, and health. Additionally, it

detects the subject positions of Facebook users who are created inside specific discourses for women who are at risk for CVD.

The study comes to the conclusion that there are two major discourses about achieving health justice and healthism that served as the foundation for the development of women's cardiovascular disease. Additionally, the subject position of Facebook users within the discourse includes altruistic fighters, health campaigners, and obedient patients/consumers. Furthermore, these results show that lowering the risk of cardiovascular disease is not only tolerable but also advantageous.

CDA Based on Van Dijk Model

Macrostructure

In Critical discourse, Van Dijk's microstructure for analysis is not enough to provide all desirable answers. Therefore, a researcher will need a broader or global structure that explains the general meaning of a particular discourse. Semantic macrostructure is one of the structures presented by Van Dijk (1997), and it provides global meaning to discourse. Van Dijk (date) called macrostructure the sequence of propositions that explicitly represent the global meaning of a text.

Van Dijk (1997) explains that macro-rules are the mental procedures that occur in the mind of a speaker or reader when they are exposed to written or spoken text. He also describes that every communication includes four macro rules: deletion, selection, generalization, and construction. These macro rules must protect the global truth and meaning of discourse.

The notion of macro-structure in discourse is that we cannot understand the theme or topic of a text by the analysis of sentence structure alone. To understand rhetoric or narrative text and to come to a conclusion of an argument, a researcher will need a global structure that provides broader meaning to the whole text.

Van Dijk's (1997) macrostructure is divided into three types:

Generalization

According to Van Dijk (1997), the first rule of generalization involves abstracting details from text to make propositions clearer. This process often involves deleting unnecessary information. However, there are limitations to generalization, such as avoiding eliminating too much or oversimplifying. In cases where a proposition cannot be reduced by a macro-rule, it becomes part of the macro-structure and is referred to as the application of a ZERO rule. The ZERO rule occurs when the input and output remain identical.

Deletion

According to Van Dijk (1997), deletion means eliminating irrelevant information for building a macro-proposition of the text. The deletion rule can only apply if macro-structures of previous parts of the sequence already exist. The study analyzes the language of science to determine if it conveys objectivity. A qualitative analysis is used to identify the original nature of language and assess the validity of the belief in objectivity. The study focuses on medical associations' guidelines and compares the data to identify discursive practices and how they convey their stance in scientific language. The analysis of language uses Van Dijk's macrostructure and Meso-structure mode of CD.

Selection:

The selection process in interpreting a text involves focusing on essential aspects while deleting non-essential parts. This process occurs simultaneously with the macro rules of deletion and selection. The concept of a typical occurrence is crucial in the selection case, as only propositions with this property can be used in the integration process.

Construction:

The macro-rule of construction helps understand the general context of the writing by using the context, schema, and detail provided in the text. It does not require organizing propositions as input and replaces a chain of propositions with a macro-proposition. The rule of construction decreases information without erasing it and adds new information at the macro level that is not part of the text base or necessitated by individual propositions.

Meso- structure or Super structure

The meso structure identifies the ideologies of researchers and associations using scientific language, with authority over others. The macrostructure provides global meaning of data, considering the authority of each field. Ideology is a function of language usage and socio-cognitive contexts, encompassing discursal, cognitive, and social features. This multidisciplinary approach connects ideologies with discourses and social cognitions at various levels, connecting micro (text and talk) and macro (social and institutional structures).


Topicalization	Situation Description
Argumentation	Degree of Description
Evidentiality	Examples and illustrations
Authority	Actor description,
Number games	Polarization
Abstraction	Nominalization
Grammatical Metaphors	Euphemism
Passivization	Topoi

METHODOLOGY:

The qualitative study analyzed scientific language features, focusing on discursive practices, field dominance, and global meaning. Data was collected from Pubmed.com and sciencedirect.com, focusing on dietary effects on cardiovascular disease, and guidelines from renowned associations.

Table#1 Titles of Medical Research Articles

Sr #	Names of Articles	Author's Names	Date of Publication
1	The role of the Mediterranean diet on weight loss and obesity-related diseases	Ramon Estruch& Emilio Ros	2020
2	Lifestyle interventions for the prevention and treatment of hypertension	L. Valenzuela et al	2020
3	Lifestyle Modifications for Preventing and Treating Heart Failure	Aggarwal et al	2020
4	Vitamin C deficiency: rare cause of severe anaemia with hemolysis	Hira Sheikh and Muhammad Suleiman Faisal	2018
5	Associations of fats and carbohydrate intake with cardiovascular disease and mortality in 18 countries from five continents (PURE): a prospective cohort study	Dehghan et al	2017



6	Vegetarian Dietary Patterns and Cardiovascular Disease	Hana Kahleova, Susan Levin, Neal D. Barnard	2018
7	Impact of nutrition and cardiovascular function	Vittorio Emanuele Bianchi	2018
	Mediterranean Diet and Other Dietary Patterns in Primary Prevention of Heart Failure and Changes in Cardiac Function Markers: A Systematic Review	d'Almeida et al	2018

RESULT

The objective of research is to analyze discursivity, objectivity, power as control on discourse and effect of power on global meaning. Therefore, the analyses will provide the detail at each level with graphs based on prominent keywords.

Discursive practices at Meso level

Ideological Analysis by van Dijk

Meso-structure or Super structure Analysis

- **Topicalization**

Embodies the essential information of any given piece of discourse)

Topicalization: effective diet in prevention of hf”

All researchers have different topics apparently, for example

1. Associations of fats and carbohydrate intake with cardiovascular disease and mortality in 18 countries from five continents (PURE): a prospective cohort study
2. Mediterranean Diet and Other Dietary Patterns in Primary Prevention of Heart Failure and Changes in Cardiac Function Markers
3. Vegetarian Dietary Patterns and Cardiovascular Disease
4. The epidemiological features of heart failure in developing countries
5. Sodium Intake and Heart Failure
6. Dietary Fat and Heart Failure: Moving from Lipotoxicity to Lipoprotection

However, through the whole research discussion it is concluded that that researcher's main purpose is to see “**Which type of diet is more advantageous in prevention of heart failure**” which is the abstract themes.

Therefore, the topicalization here is concluded as “**effective diet in prevention of hf**”

This abstract theme is concluded on the bases most frequent use of key words which are” advantageous protective effect o

The associations are clearer in their guidelines in term of topic the apparent topic as well as abstract topic align with the same theme which is guideline for the prevention of CVD

1. American heart Association (AHA)
2. EUROPEAN SOCIETY OF CARDIOLOGY
3. Heart failure society of America (HFSA)
4. World health organization (WHO)



Guidelines:

- 2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure Developed by the Task Force for the diagnosis and treatment of acute and chronic heart failure of the European Society of Cardiology (ESC) With the special contribution of the Heart Failure Association (HFA) of the ESC
- AHA Dietary Guidelines: Revision 2000: A Statement for Healthcare Professionals From the Nutrition Committee of the American Heart Association
- Guidelines for Prevention and Management of Heart Failure
- Prevention of Cardiovascular Disease Guidelines for assessment and management of cardiovascular risk by WHO

Situation Description, Degree of Description and Examples/Illustrations

situation description (refers to the description of actions, situations and experiences surrounding events in order to understand the causes and consequences pertaining to such events); level or degree of description (refers to language user's choice to describe an event abstractly, generally, specifically); synonymy (refers to a semantic relation of total or partial sameness in meaning of propositions); example and illustration (these functionally seek to provide proofs or concrete evidence in support of an argument).

Researches:

There are all medical articles they didn't describe any particular social interaction however; these articles describe different situation which is **cause and effect relationships**.

For example: **Lifestyle factors** such as poor diet, obesity, lack of physical activity, and increased levels of emotional stress have **likely contributed** to the changing epidemiology of HF.

Here general situation is related to heart failure as well its prevention. As I purposely selected the articles that gives recommendation on how diet will prevent Hf so in these articles researchers gives causes and effect at semantic level to explain why particular thing happen for particular reason.

This situation description is intertwining with degree of description which is languages users choice to describe the event for this and with example and lustration to make their points valid like in the first except

Situation description: Cause and effect relationship including the mechanism of the relationship and also **level or degree of description:** "what happens in causal relationship

Example and Illustration: why does it happen?" that explanation of the causal relationship.

for example: **Increased in cardiorespiratory fitness** CRF is strongly associated with **decreased incident HF** and has benefit in both HFrEF and HFpEF

Associations:

All associations and their guidelines provide the prevention of CVDs in all aspects. All these recommendations are based on their researches so these guidelines explain things that a person should not avoid and for this the seriousness of advice is explain using these worlds like must should and for making their claim power they also illustrate example

The common sentences are like AHA **recommend s**. The AHA recommends that healthy individuals obtain an adequate nutrient intake from foods.

- **Argumentation, Evidentiality and Authority with Number games**

Argumentation (a situation in which a participant tries to make his or her standpoint more credible and acceptable); evidentiality (consists of a written or spoken evidence for establishing the validity

of an argument); **topoi** (refers to the use of self-evident premises in support of an argument); **authority** (refers to the mentioning of morally superior authorities to support an argument or a proposition) and **number games** (a semantic strategy where number and statistics are deployed to enhance credibility and objectivity in argumentation).

All these terms are intertwined with each other's

Researches:

As language of science is nonnegotiable because it includes evidences to make it more valid and fossilized so here the researcher refer guidelines as authorities to make their point clear and nonnegotiable also, they use authorities for argumentation as well to express their perspective.

Articles refer to guidelines of association as authority figure to support their arguments while argumentation towards association is also done where researcher gives their research as a claim against guidelines to criticize a point and this point is even intertwines with evidentiality which increase proportion in meaning.

Argument: There is a strong need for well-designed, prospective trials on the effects of sodium restriction in HF patients

topoi: high salt intake is associated with an increased risk of high blood pressure recommended by different guidelines however Despite guideline recommendations, patient adherence to dietary sodium restriction is poor.

Evidentiality with number games: In an analysis of survey data from patients with self-reported HF, the mean sodium intake was 2,719 mg/day, with only 34% consuming.

- Sodium restriction may be most appropriate for patients in New York Heart Association (NYHA) functional class III and IV.
- In the 2013 AHA/ American College of Cardiology Foundation (ACCF) guidelines for the management of HF, sodium restriction is considered reasonable (Class IIa recommendation) for patients with symptomatic HF to reduce congestive symptoms, but the guideline also emphasized that there is lack of evidence for a stronger recommendation.
- **Authority:** Association's guidelines

Associations:

Associations are the authorize figure therefore the use more generalize language and give to the point advised which are non-negotiable also they make their claim stronger through number games a well their research illustration make their work stronger

The AHA strongly **endorses** the consumption of diets that include a wide variety of fruits and vegetables throughout the day, both as meals and snacks. Fruits and vegetables are high in nutrients and fiber and relatively low in calories and hence have a high nutrient density.

Argument: the AHA **advocates** a population-wide saturated fat intake of ,10% of energy

Topoi: Saturated fat is the principal dietary determinant of LDL cholesterol levels.

Evidentiality: using number games:51 Average LDL cholesterol levels in the American population have become progressively lower as average saturated fat intake has declined from 18% to 20% to '13% of energy intake over the last several decades. To help achieve further reductions in the average LDL cholesterol level, the AHA advocates a population-wide saturated fat intake of ,10% of energy.

Authority: words like advocates, endorses proves that associations themselves are authority figures.

- **Actor description, Polarization:**

actor description (refers to the ways discourse actors are portrayed - individually, collectively, negatively, positively or neutrally); The representation of discourse actors in ideological discourse is usually about US and THEM. Hence, actor description usually dovetails into discourse actors' polarization into ingroup (US) and outgroup (THEM), a polarization that embodies positive self-presentation and negative other-presentation.

Actor description: Here the data is from science and in science factualization or objectivity is offered to give a reliable overview therefore apparently there is no use pronominal distinctions and nominal groups like our we or them or any use of pronoun

However, in one article the use of first-person pronoun “we and our” which indicate that there is some phenomena that researcher compare different findings to see which fits better. Here, the researchers are comparing their view of with the researchers of other in order to find which diet is best. This means there is apparent polarization into ingroup (US) and outgroup (THEM),

Polarization: The researchers or this particular research on diets vs the research did by other researcher on different diets which are (outgroup) also mentions as them

However, in almost all studies researchers are not apparently describe any polarization because the researcher uses associations guidelines to make their point valid which automatically makes associations an authorize figure

- **Lexicalization and Synonymy:**

Lexicalization denotes the expression of concepts and beliefs via deliberate choice of lexical items. In the choice of words and how they interpret in science is done by nominalization, abstraction and grammatical metaphor.

- **Abstraction:**

In abstraction we use words that are basically terms for objects but they are used for abstract term like Heart failure is not a something as it presents however it represent an abstract idea. Also the common phrases use in scientific language is “the study explains” “ theassociations claims”

- **Grammatical metaphors:**

Grammatical metaphor has been described as a rhetorical strategy for creating new modes of meaning. grammatical metaphor transfers meaning from one grammatical status/class to another, for instance nominalization

Nominalization: Nominalization is the single most powerful resource for creating (ideational) grammatical metaphor.

The other common thing is nominalization which we use words like verbs and adjectives as noun

For example: Moreover, the data from the European Perspective Investigation into Cancer and Nutrition (EPIC-Oxford) have shown that average individual yearly weight gain is reduced when people limit consumption of animal food.

- **Euphemism**

As these are research articles and associations and they have to give facts, so there no use of any euphemism to avoid` misunderstanding.

- **Passivization:**

They are also pushed towards passive constructions, both by tradition and by their own desire to step aside and allow their work to speak for itself. These forces produce characteristic constructions such as:

Similar research was carried out using the diet scale. . .

Critical discourse analysis at Macrolevel:

The macro structure analysis provides the thematic or global message of the text. As, the superstructure analysis of text describes that associations have authority over researchers; therefore, their language of providing the information is also different from research. Van Dijk (1997) explains that macro-rules are the mental procedures that occur in the mind of a speaker or reader when they expose to written or spoken text. Also describes that every communication includes four macro rules and these macro rules must protect the global truth and meaning of discourse. These rules are deletion, generalization, selection, and construction.

4.2 Macrostructure in Associations.

Superstructure indicates associations are authoritative in medical fields. Their guidelines and sites provide information globally, therefore their language is direct and more clear. Therefore, their way of applying macro rules is also different and some macro rules are more frequent than others.

Generalization

Generalization is very important to convey clear and concise ideas. applying generalization in the scientific text means holding for predicate and applying it to both nouns and verbs. High, medium, and low modality verbs show generalization as it conveys direct commands, request, asking permission and possibility, etc. High and medium modality verbs indicate the level of certainty of the speaker or writer. Similarly, in scientific writing the modal verbs may indicate hedging, softening the claim, or showing certainty.

However, the associations writing analysis indicates the usage of medium modality modal verbs like should, should be, will, etc. The medium modality may indicate certainty as associations provide guidelines so the statements should be clearer and to the point. Although it shows that they might soften the claim while balancing both ends, so the text should not look like a command or uncertain

For example: While providing dietary recommendations, the **use of should** is very common.

- I. Total fat intake **should be** reduced to about 30% of calories. World Health Organization, 2007)
- II. All individuals **should be** strongly encouraged to take at least 30 minutes of moderate physical. World Health Organization, 2007)
- III. Processed meat **should be** minimized. (European Heart Journal, 2021)

Moreover, Rather than giving examples and information on the advice and its legitimacy, **the verbs likerecommended** are commonly used to give direct recommendations.

For example:

- I. A healthy diet is **recommended** as a cornerstone of CVD prevention in all individuals. (European Heart Journal, 2021)
- II. It is **recommended** to restrict alcohol consumption to a maximum of 100 g per week. (European Heart Journal, 2021)
- III. Since 1961, the American Heart Association (AHA) has **recommended** a reduction in dietary saturated fat to reduce the risk of CVD. (American Heart Association, 2017)

Although associations explain the general truth by giving broad statements and deduct explaining. However, these direct statements also raise the question of faulty generalization. These faulty generalizations tend to forget about individuals or situations about whom the generalization doesn't apply, and cause over-abstraction of knowledge which may be harmful to people.

The possibility of faulty generalization in associations indicates they may manipulate the facts, as they don't have to provide explanations while giving recommendations. Also, these manipulations may be the reason political or social agendas that providing to these associations Like food chains, food authorities, etc.

Deletion

Deletion is Dijk's first macro rule consists of taking out details that aren't essential to understanding the message of a text or speech. The rule works because not all parts of a speech are equally relevant to understanding its content.

While some contain the essential information that tells us what it is about, others only provide extra data that can be suppressed when we try to stay with the general meaning of the text.

The common deletion in the text is by eliminating **nouns**. Similarly, depersonalization also causes deletion.

For example, these statements start with verbs and it does not include a subject but it still conveys the meaning that these are recommendation for CVDs patients.

- I. **Excess alcohol** intake is associated with increased blood pressure and body weight, major risk factors for CVD. (American Heart Association,2017)
- II. **Excess salt** is associated with increased blood pressure levels. The recommended intake is less than 5 g of salt per day. (American Heart Association,2017)
- III. **Replace** red meat with oily fish such as mackerel, trout, sardines, or salmon. (American Heart Association,2017)

SELECTION

The next macro rule works oppositely to the deletion of one. The selection process consists of focusing on just those aspects of the text that are essential to interpreting its broader meaning.

The macro rules of deletion and selection occur at the same time. As when we pay attention to one section of the text, our brain deletes the other parts and vice versa.

In the selection case, the speaker of the writer includes all those phrases related to a particular fact or an idea.

scientific language shows selection by nominalization, substitution, and depersonalization. So as in association language, the common implementation of the selection rule is by adding passivation and by nominalization.

The depersonalization is not seen in these guidelines as the **use of "we"** and mentioning the associations is done throughout texts. This shows that associations have power over other fields in medical science and this allows them to personalize the text.

For example:

- I. **we** cannot exclude that in some patients at high or very high CVD risk. (European Heart Journal, 2021)
- II. However, the nominalization is very much common in associations.

For example:

- I. The purpose of comparison.....
- II. The treatment of half....

Construction:

Finally, the macro-rule of construction serves to understand the general context of the writing. Although the actual idea is never stated explicitly, it is evident from the context, schema, and detail provided in the text. The unique feature of CONSTRUCTION is that it does not require any organizing propositions to be provided as input. On the contrary, under identical conditions as in INTEGRATION, a chain of propositions is directly replaced by a macro-proposition.

The common way of construction is the **use of pronouns, definite articles, and macro-connectives (conjunctions)**

The associations apply the construction rule adequately but not too much. The reason is the power in their discourse that allows associations to write a generalized and short text and make less construction like giving examples which in a scientific language is evidence, depersonalization, and nonnegotiable language.

for example:

- I. Air pollution contributes to mortality and morbidity. **It** specifically Increases the risk of respiratory and CV diseases. ESC
- II. Compared to the 2019 ESC/EAS dyslipidaemia guidelines,³ **we** pro-vide a single cut-off for identifying 'older persons' as **those**. (European Heart Journal, 2021)
- III. In summary, while a combination pill has some promise as a means of targeted treatment, it raises major challenges that would have to be addressed if it is to meet the claims made for **it**. (World Health Organization, 2007)

Macrostructure of Journal Articles.

Based on superstructure analysis, it is clear that researchers have less power than associations in medical discourse. Although being under the associations, researchers have to use more examples and number games to make their claims strong. However, this way they indicate that their way of conveying global meaning is also affected. Moreover, for comparison with associations, macrostructure analysis will identify which rules are more frequently applied by researchers.

Generalization.

To make a clear and concise statement, one has to generalize the text. Association's data analysis shows that they use medium polarity modal verbs to make their claims. Their usage of medium polarity modal verbs may be to appear moderate and not too harsh for commands.

However, in research, the overall usage of modal verbs is much less than associations. The usage of high and model verbs are like

For example:

- I. Global dietary guidelines **should be** reconsidered in light of the consistency of findings from the present study... (Ros, 2020)

However, using low modality verbs is much more significant than high or medium modality. This shows that the researchers are not as certain as associations in their claim or they want to be in a safe zone of discourse. Although, In contrast to associations, researchers give examples and information when providing recommendations, **the verbs like recommended** or Epistemic lexical verbs are not significantly used to give direct recommendations. Even if these types of verbs are used, then their usage is more connected to the examples rather than the researcher's stance.

For example:

- I. Mediterranean diet (TMD) **recommended** the use of olive oil in the TMD + olive oil group



- II. However, **some researchers consider** that diets rich in fruit and vegetables are not useful to reduce body weight compared to the control diet. (Ros, 2020)
- III. Current guidelines **recommend** reducing dietary fat to <30% of energy and limiting SFA intake to less than 10% and replacing them with unsaturated fatty acids (The role of the Mediterranean diet)
- IV. **Statistics from the United States in 1991 established** that heart failure was the Primary approximately. (Gustavo F. Mendez, 2001)

These verbs indicate they don't generalize the statement but their usage is to give examples from associations and other statistics to stand their claim

Deletions

The rule of deletion works because not all parts of a speech are equally relevant to understanding its content. The association's analysis indicates that the common deletion in the text is by eliminating **nouns**. Similarly, depersonalization also causes deletion.

However, the deletion of a noun is not very significant in journal articles.

For example:

- I. **Intake** of dietary inorganic nitrate has been associated with improved exercise capacity, and reduced. (Pedro L. Valenzuela et al., 2021)

Depersonalization is also part of journal articles. However, it is more significant than associations.

For example:

- I. **According to a 2019 systematic umbrella review**, insufficient evidence is available to determine the relationship between exercise intensity and BP19. (Pedro L. Valenzuela et al., 2021)
- II. **These recommendations are largely based on old ecological and ob-observational studies performed** in Europe and North America, wherein SFA accounted for around 20% of total energy intake. (Ros, 2020)

the reason for depersonalization in articles is that they don't want to state their claim explicitly and also they need to spot their claim, which can be done by citing other results.

Selection:

The selection process consists of focusing on just those aspects of the text that are essential to interpreting its broader meaning. The association data show that selection is done by passivation, nominalization, and by depersonalization. However, the depersonalization is not seen in these guidelines as the **use of "we"** and mentioning their own is done throughout texts. But this is different in case of journal articles.

Construction:

Finally, the macro-rule of construction serves to understand the general context of the writing. Although, as Van Dijk (1997) describes that in generalization actual idea is never stated explicitly, it is clear from the context, schema, and detail provided in the text. However, the common way of construction is the **use of pronouns, definite articles, and macro-connectives**. The **usage of these characteristics in associations is visible but not significant as compared to research**.

For example:

- I. Methodological quality was explored using an approach **similar to that recommended** by Cochrane Collaboration in risk assessment (Almeida et al., 2017)
- II. **Style factors in blood pressure-reducing effects**. Summary of the major,

III. evidence-based lifestyle factors that reduce blood pressure levels and the risk of hypertension. (Pedro L. Valenzuela et al., 2021)

Researchers use both selection and construction to make their point valid. However, associations use more generalize language also selection to elaborate their point. Although, if there is a generalization there have to be deletion. However, associations do deletion not to much because they are giving the guidelines and they must be understood by people.

Macrostructure	Researchers	Associations
Generalization	Researches use guidelines to make their claim so the element of generalization is not very clear here. To make them point they need additional information like use number games to give other statical information to make their point valid.	Through ideological analysis it is prove that associations have authority. However, association are also had to provide information elaborately about disease so they do selection enough but also do generalization to make their words to the point. Association does more generalization in predication
Construction	Researchers use global information, to fulfil discursive practice which evidentiality they do best to give other information in single sentence before giving their claim.	Associations are valid their guidelines are made after the detail and prestige researches they don't need to add every single information or every aspect to make their point clearer.
Selection or integration	Researchers do more selection because they need a proper base before giving their claim or to argue about something.	Many useful information may be deleted because to make themselves briefer. However, associations not do all type of deletion because they also use number games for giving their stance
Deletion	There is not a significant deletion especially in term of dietary preventions.	Associations do deletion because they are not extra examples and illustration like researches, but they have to give all the necessary information regarding the disease so they elected only specific information and number games for strong argument and do deletion of like extra examples and illustrations.

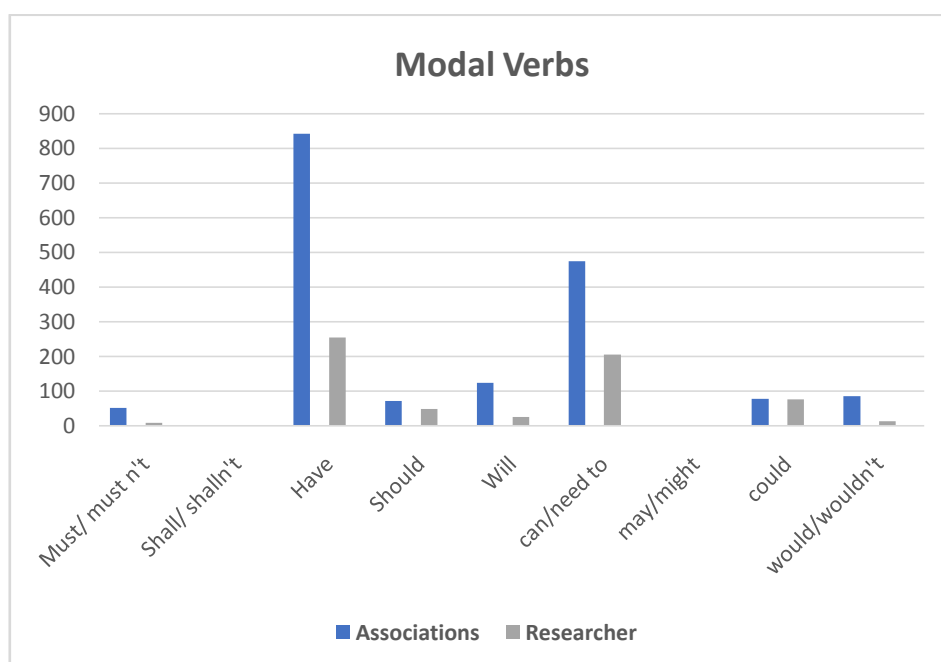
Macrostructure Analysis using AntConc.

The detailed macro-structure analysis identifies how the thematic meaning is conveyed by both groups and describes their way of applying all four macro rules. Examples are also given in the analysis for a detailed explanation. However, the study also applies a corpus tool for an explicit understanding of associations and researchers' discourse while conveying their thematic meaning at the lexical and semantic levels. Therefore, the study uses AntConc by Lawrence Anthony and extracts raw concordance detail, and compares both groups' data.

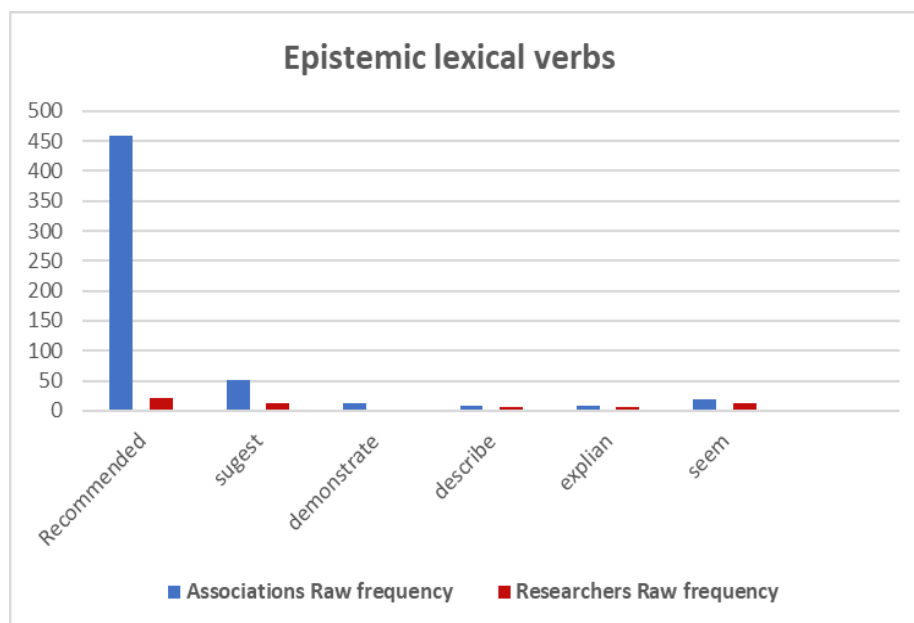
Generalization

Modal verbs		Associations		Researcher
		Raw frequency		Raw frequency
high modality	Must/ must n't	51		8
	Shall/ shalln't	1		0
	Have	841		254
Medium modality	Should	71		48
	Will	124		25
	can/need to	474		204
Low modality	may/might	947/39		75/105
	could	78		75
	would/wouldn't	86		12

Graphs of generalization



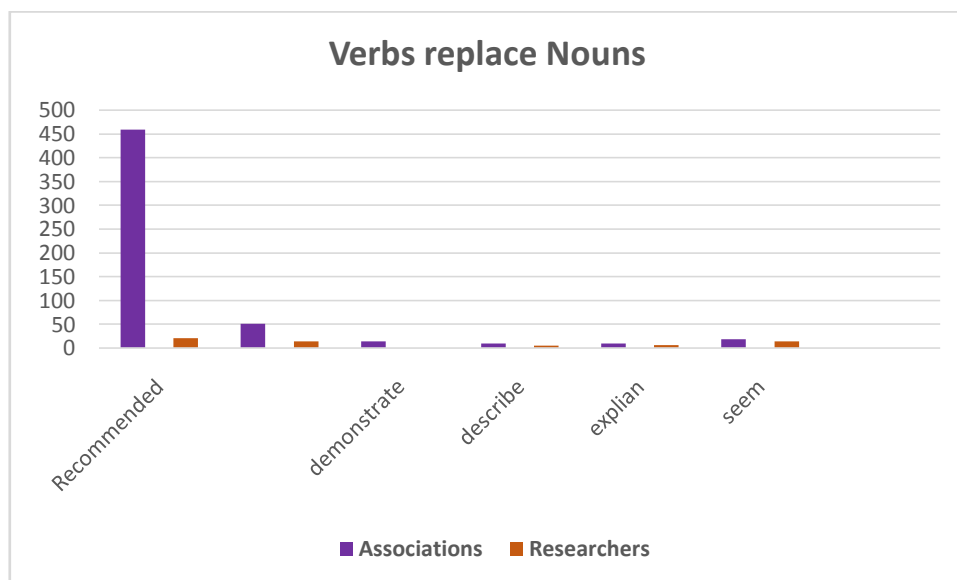
Epistemic lexical verbs	Associations		Researchers
	Raw frequency		Raw frequency
Recommended	459		20
suggest	51		13
demonstrate	13		0
describe	9		5
Explain	9		6
Seem	18		13



Deletion

Deletion is usually seen in sentences that start from verbs while deleting nouns. However, we try to make rough statistics of verbs that initiate sentences.

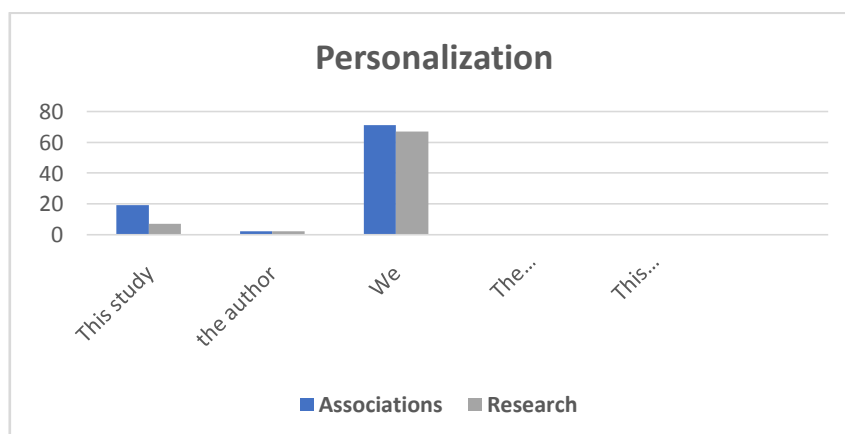
Verbs Replace Nouns	Associations		Researchers
	Raw frequency		Raw frequency
Recommended	459		20
	51		13
demonstrate	13		0
describe	9		5
Explain	9		6
Seem	18		13



Selection:

Selections indicate the author uses of depersonalization in text and makes a passive sentence. However, depersonalization is visible in journal articles text, which points to the passivization usage. While, depersonalization is not visible in association text. Similarly, cognitive verbs are also used for personalization which also occurs in associations data.

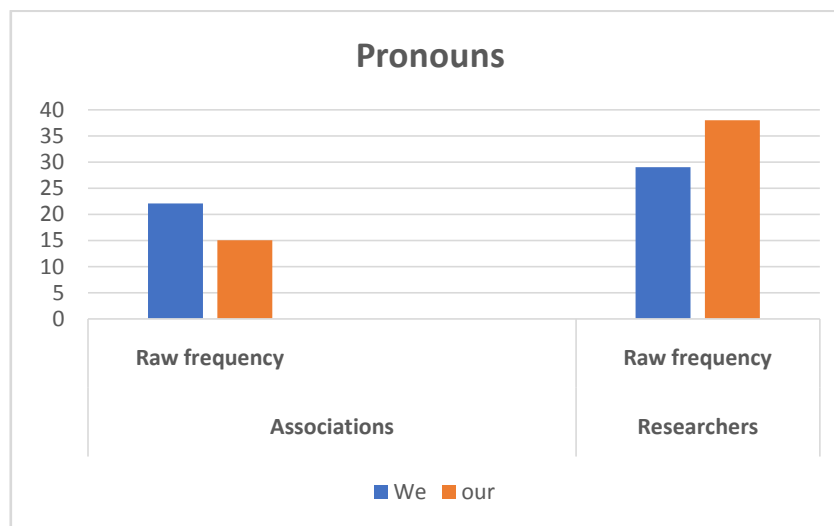
Personalization	Associations		Research
	Raw frequency		Raw frequency
This study	19		7
the author	2		2
We	71		67
The researcher	0		0
This reseach/guideline	0/24		0/0



Construction:

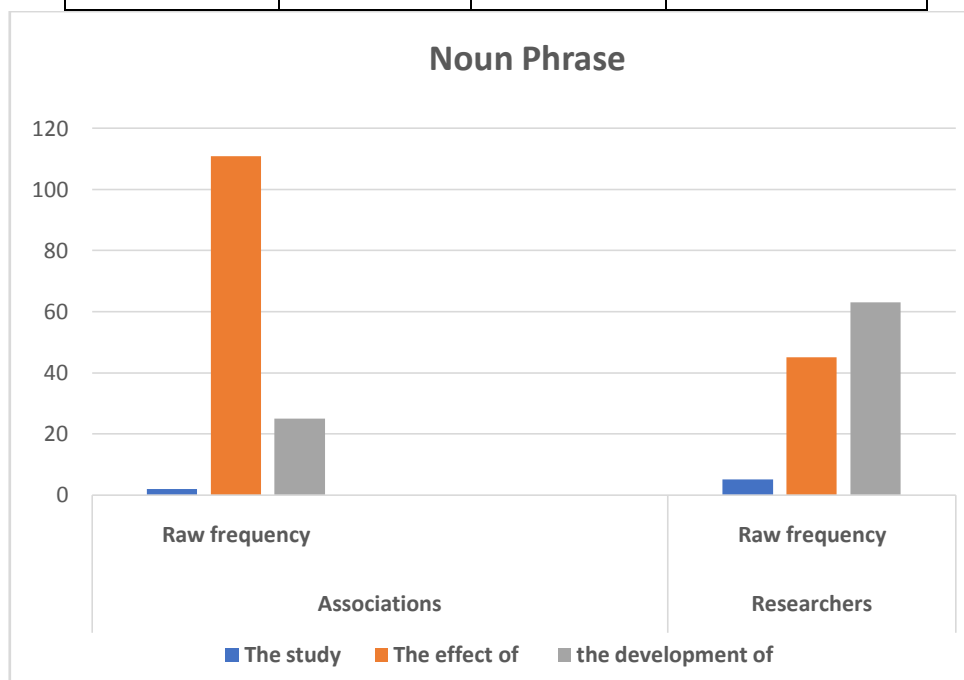
The construction is visible through nominalization, pronouns, connectors and adjectives, and adverbials. Unfortunately, due to time constraints, only a few examples can extract from AntConc using regular expression and tagged data.

Pronoun	Associations		Researchers
	Raw frequency		Raw frequency
We	22		29
Our	15		38

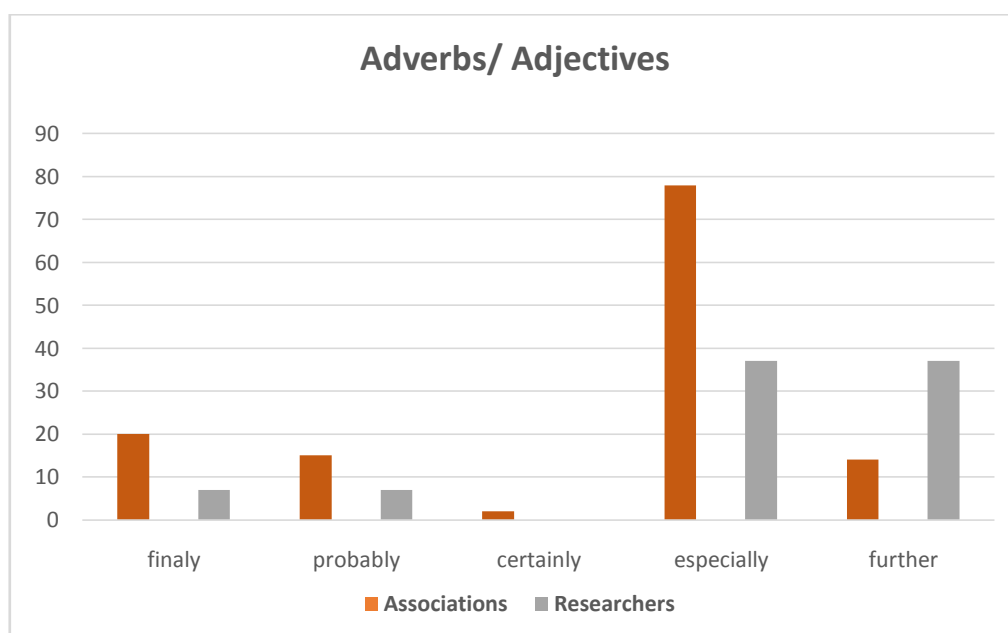


Noun Phrase

Noun Phrases	Associations		Researchers
	Raw frequency		Raw frequency
The study	2		5
The effect of	111		45
the development of	25		63



Adverbs/ Adjectives	Associations		Researchers
	Raw frequency		Raw frequency
Finally	20		7
probably	15		7
certainly	2		0
especially	78		37
Further	14		37



Discussion

5.1 Ideological Analysis

It is concluded that, like every institution, medical and health professions also have agendas to fulfill apart from conveying information; therefore, the idea of complete objectivity is absurd. The discourse is not only dominant between different professions; it can also be dominant within the professions between different fields or domains. That means social power may also be locally enacted within the fields of a profession. Likewise, in the medical profession, the quantity and quality of information conveyed by associations and researchers may also differ based on the level of authority. Therefore, the Van Dijk mesostructure explains that keywords like "must", and "should" used by associations show that they have to provide strict guidelines for all the people who suffer from CVDs and want to get information about CVDs. While researchers use association claims mostly to make their point stronger, besides, non-negotiable language, which is also a feature of scientific language, is visible in associations. However, the polarization tactics that Van Dijk describes as "them" and "us" are not visible in the data. Yet, the features that make associations' ideologies clearer, factual, and authoritative are topicalization, argumentation, examples, and situation descriptions.

5.2 Analysis at the macro level

The meso-level analysis is most helpful in analyzing the ideologies of both fields. The analysis also concluded that associations have authority over research. However, to understand the global meaning of a text, macrostructure analysis is used.

The macrostructure analysis provided the thematic meaning of both texts and explained the kind of effect that the authoritative field has over the other. In macrostructure by Van Dijk, there are four levels at which text can be analyzed: selection, deletion, generalization, and construction. Selection can show the extra or unnecessary use of information, and if someone makes the selection, there will be a construction. The deletion is getting rid of extra or unnecessary information. However, in terms of power abuse, the deletion can also delete important information to manipulate the facts. The deletion is related to generalization because, to convey a generalized idea, one has to abstract the information.

The analyses show that associations are generalized in their text. There may be two reasons for generalization: objectivity and authority. The first reason is that associations have to give guidelines on CVDs, which can be helpful for patients, doctors, food industries, etc. Therefore, guidelines should be straightforward and concise. That's why associations use generalized language while deleting unnecessary information and using a modal verb like *should*, or *must*.

The second reason is authority or power. As the previous analysis shows, associations have authority over the research. Yet researchers use examples and illustrations from other research and associations' guidelines to prove their point. This extra information leads researchers to the selection, and this elaborative text then becomes constructed. Although, apparently, associations have not deleted important information yet, they were more generalized compared to research. Besides, construction and selection are dominant among researchers. But the overgeneralization of association also hints at the faulty generalization of global meaning. The overuse of abstraction where it is not needed indicates that even in the field of objectivity, power controls the language. The control or manipulation of language may be due to the political agenda or hold of food chains and agencies, which might even control the authoritative field of the medical domain. Thus, this authoritative field uses its power to manipulate the facts.

In conclusion, macro analysis shows the way both fields use their text to convey global meaning and how authority shapes the text at four levels (selection, deletion, construction, and generalization). This analysis also makes room for the possibility of further analysis on the manipulation of facts or power abuse that the associations may have committed in their discourse.

CONCLUSION

The study aims to unveil the language of science, especially the hoax of objectivity in the medical profession. There is a universal belief about the medical profession that the information provided by them is tested, proven, factual, and stable in the overall scientific domain. It is also believed that without manipulating the facts, all fields in medicine have equal power.

However, the detailed analysis of association guidelines and research data at the ideological and macro-level reveals the other side of the story. The result concluded that the discursive practices of scientific language are to make assumptions about knowledge, state claims, and challenge others.

Based on discursive practices, associations are often easy to convey information by giving no extra arguments, while researchers have to depend on associations to provide their stance. This shows the unequal power between both groups. Therefore, the generalization of the association's discourse may also cause manipulation of facts that can be untraced. This also proves that associations have authority over researchers, which leads to inequality in medical discourse. Thus, it raises doubt about the true nature of knowledge conveyed by associations. Yet, it is concluded

that the idea of power as control and mind control leads to associations, and the belief in objectivity in reality seems absurd.

5.3 Limitations

The present study only focuses on the apparent indication of a power imbalance within the groups and the way this imbalance conveys meaning. However, some drawbacks of this study may become opportunities for future researchers to contribute to this area of research. First, the study only explains linguistic phenomena that are affected by unequal discourse. However, the actual reason for the manipulation of language in the scientific domain is still questioned. Second, time limitations also affect this study. Third, apart from the qualitative study, quantitative detail analysis is also required to provide a clearer vision of the objective of the study.

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