**Professional Ethics in Clinical Research**

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**Abstract**

Over the past few decades, randomised controlled trials (RCTs) have overtaken clinical judgement, case reports, and observational research to become the gold standard for medical evidence. Additionally, throughout this time, RCTs developed into a crucial part of the regulatory process by which a novel medicine could get access to the pharmaceutical market. As research issues get more complex, clinical trials have grown to be huge, tightly controlled operations that must balance adhering to ethical guidelines with upholding high epistemic standards. In this review, the author will explore some of the most important ethical issues relating to RCTs, with an emphasis on current debates and the context of oncological research in particular.

**Keywords:** Ethics; Trials; dilemmas; RCT; Legal; Tele Pharmacy; Consent and confidentiality.

**I. INTRODUCTION**

Ethical quandaries develop when these are differences about ethical behaviour or the application of ethical standards. Because each party's beliefs, sense of justice, and fairness may differ, ethical quandaries can arise between pharmacists and clients, pharmacists and physician, and among pharmacists. Each party may advocate a different principle, such as utilitarianism vs respect for the person. In health care, ethical quandaries most typically concern physicians, but in an expanding cascade, other healthcare workers, such as pharmacists, are experiencing problems in their occupations that cause ethical quandaries. Within a generation, our health-care systems have progressed from very simple to extremely complicated. The issue of legal culpability, both actual and imagined, influences the conduct of doctors and pharmacists as they try to practise [1].

Recognizing the growing role conflict, particularly in the community pharmacy environment, has encouraged pharmacists to reconsider their position in healthcare during the previous few decades. In 1986, pharmacy was defined as a "profession in transition," with considerable changes occurring in reaction to pharmacists' perceived loss of function, social influence, and prestige, resulting in a shift toward a patient-centred position. One significant manifestation of this transition is the review of codes of professional ethics; in certain countries, such as the United Kingdom and the United States, there has been an ongoing debate over the review of codes of ethics throughout the latter two decades of the twentieth century [1].

While current pharmacy ethics guidelines emphasise that patients' dignity and welfare must be paramount, it has also been recognised that this dedication to patients' dignity and welfare can be jeopardised when pharmacists allow corporate aims to influence and dominate their behaviour [1].

Our present understanding of human subject’s research is influenced by three key texts produced in the aftermath of the earlier described events of research misbehaviour. The Nuremberg Guideline is a legal and ethical code issued by US judges at the Nuremberg Trials following World War II. Many see it as the most authoritative legal reference on human experimentation. It is founded on global principles of natural law and human rights, and it defines the fundamental idea that participation in research needs the subject's free and informed agreement. The Helsinki Declaration is undoubtedly the most well-known and important medical research guideline in the world [1][2].

It is a World Medical Association (WMA) official policy that was first released in 1964 and has since undergone numerous revisions. The Declaration could be seen as a sign of the WMA's efforts to strike a compromise between the need to create high-quality medical knowledge and the need to safeguard the interests and health of research participants. Lastly, the Belmont Report is a brief treatise on moral principles produced in 1978 by the National Commission for the Protection of Human Subjects of Biomedical and Behavioural Research in the aftermath of research misconduct scandals in the 1970s. The Belmont Report is especially known for establishing a framework of basic moral principles—respect for persons, beneficence, and justice—which should guide the conduct of research The directives of the Council of Europe and the European Commission, as well as, of course, the National Bioethics Commissions of each member state, offer further guidance at the European level. This review focuses on a subset of human subject’s investigation, viz. the phase of clinical research where a novel therapeutic or therapeutic procedure is tested on living subjects: the medical experiment [2].

Professional codes of morals have served as publicly acknowledged norms for professional conduct that go above and beyond the bare minimums required by law and society over the years. These codes have also helped to impose a constructive, cohesive effect on individual members of a profession, and as products of professional associations, they represent the consensus of a wide variety of practitioners' viewpoints on current, real or potential, difficulties in practise.

These four main principles are

* Respect for autonomy (including the right to informed consent, privacy, refusal of treatment, veracity)
* Beneficence (the moral obligation to benefit others)
* Non-maleficence (to do no harm)
* Justice (fair, equitable and appropriate treatment in light of what is due or owed).

Since the emergence of bioethics and the rise in public expectations, the remaining two principles, autonomy and justice, have gained significance, although prior generations of codes of ethics in pharmacy would often focus on two of these principles: beneficence and non-maleficence [3].

**II.THE RANDOMISED CONTROLLED TRIAL**

In its most basic form, a randomised controlled trial (RCT) compares the effects of an experimental treatment against the course of the illness that is the subject of the study without treatment. To draw a result that can be generalised from the study, the evaluation is conducted under strictly controlled circumstances. [4]

The goal of several components of scientific trial design is to minimise this kind of interference with the results. The most infamous of these features is random subject assignment, which is frequently connected with blinding participants and, in some cases, investigators. Following an unpredictable, chance-based approach, patients enrolled in a trial are randomly assigned to either the experimental group or the control group; neither they, the investigators, nor the participating physicians are aware of which arm they have been assigned to. The main goal of this technique is to eliminate subjective interferences, such as the potential for healthier patients to initially be assigned to one arm of the trial by the researchers. Similar to this, even though there is considerable methodological debate over the suitability of the significance test for this task, its approach is employed as an objective technique to identify real variations in treatment effectiveness from sporadic changes in patients' reaction to therapy. The RCT methodology is currently regarded as the gold standard in therapy evaluation due to its scientific standing. RCTs have essentially replaced clinical judgement, case reports, and observational studies as the de facto standards for medical evidence over the past few decades, thanks in great part to the work of the evidence-based medicine movement. RCTs also developed into a critical component of the regulatory procedure during this time, which is required for a new therapy to enter the pharmaceutical market. Clinical trials nowadays are huge, highly regulated businesses that must balance adhering to ethical standards with upholding high epistemological standards, a balance that gets harder as the research issues get more complex. [4].

**III.THE MAIN ETHICAL ISSUES SURROUNDING RCTS**

The general problem with the ethics of clinical trials stems from the fact that those who stand to gain from the trial results are not the same that bear the risk and burden of trial participation. Participation in a clinical trial entails an increased level of risk with respect to ordinary clinical care, particularly due to the potential for exposure to unexpected effects of a new treatment since the trial's primary goal is to produce generalizable medical knowledge rather than treat trial participants, these risks aren't truly outweighed by a potential clinical benefit. Depending on the component of the RCT is highlighted, we will find that this ethical tension has a variety of manifestations in the sections that follow. The author will give a brief introduction to each of the critical issues—informed consent, use of placebos, randomization, and participant protection—present the relevant ethical concepts and principles, and then discuss the most pertinent questions that are still unresolved on the subject. [5].

**IV.PARTICIPATION AND INFORMED CONSENT**

The history of medical research includes multiple instances where trial participants were unfairly burdened by research participation, either by misleading them with the promise of a treatment or by purposefully hiding their participation in research This is no longer acceptable in our contemporary ethical perspective, and every study involving human beings must be pre-emptively approved by the subject(s) through the process known as informed consent. Informed consent, one of the key concepts in contemporary biomedical ethics, is now a need for both treatment and research. Even in the early days of medical testing, individuals were occasionally given written consent papers. However, rather than being an indication of concern for their welfare, this was typically a tactic used to ensure the subject's cooperation. Modern informed consent differs greatly from these early examples in that it is based on the Nuremberg Code's fundamental premise of the respect for individuals and the importance of their autonomy [6].

**V. USE OF PLACEBO AND DECEPTION**

The use of placebo controls is subject to a complex trade-off between the rigour of the scientific justification for utilising it and the potential for harm to participating patients under the majority of ethical rules and research recommendations. For instance, the Declaration of Helsinki's most recent revision states that the use of placebo is acceptable when there is no effective treatment available, as well as "where it is necessary to assess the effectiveness or safety of an intervention for compelling and scientifically sound methodological reasons," provided that "the patients receiving placebo or no treatment will not be exposed to any risk of serious or irreversible harm." [7].

**VI. RANDOMISATION AND BLINDING, AND EQUIPOISE**

By definition, RCTs involve randomization and, in certain circumstances, participant blinding. To rule out the most blatant alterations to the trial results brought on by investigator or patient influence, these two epistemic tools are necessary. Blinding and randomization, however, might be in conflict with participants' own preferences. The primary reason for this contradiction is that when randomization and blinding are used, patients cannot receive tailored treatment recommendations based on their condition. Patients, on the other hand, explicitly consent to this when they sign up for trial participation. However, randomization between the two arms of the trial raises another ethical question that is not readily disregarded. Participating patients in an active-controlled RCT have a possibility of obtaining a therapy that turns out to be inferior. This is especially troublesome if the experimental treatment turns out to be worse than the standard of care accessible outside of the study, because it is a widely accepted ethical precept that patients should be given the best confirmed standard of care wherever possible. Apparently, randomization damages trial participants since they may be denied the greatest level of treatment available by enrolling in the study. The view that is currently prevalent in the ethical literature is that equipoise, denoting an epistemic state of indifference between two treatments, can relieve this ethical tension. If the medical community is in equipoise, this means that there exists a state of ‘honest professional disagreement’ among medical scientists about which treatment is best [8].

**VII. NAVIGATING BETWEEN EXPLOITATION AND OVERPROTECTION OF PATIENTS**

In clinical research, there is a distinction between trial participants, who are exposed to the danger of a medical intervention, and future patients and society as a whole, who are intended beneficiaries of the trial results. The section's introduction addressed this gap .The majority of ethical guidelines currently in use, which were designed with a focus on protecting subjects from the risks and expenses of study, were created with this gap in mind. For instance, the Helsinki Declaration declares that "the welfare of the individual study subject must take precedence over all other interests." However, there has been an increase in criticism of this paradigm in recent years as a result of the focus on participant protection. In general, two things work against it. Among outcomes with initial equal value [9].

**VIII. AN OUTLOOK ON ONCOLOGICAL RESEARCH**

The study's subjects are based on features of clinical research and the RCT methodology, such as the need for participant blinding, random assignment to treatment groups, or the notion that clinical practise and research must abide by different ethical standards. To wrap up this review, the author will specifically examine the setting of oncological research. Cancer is a condition that can be fatal and manifest itself in a variety of ways. Therefore, the majority of the ethical issues we discussed in this chapter, such as the permissibility of using placebos or the risk of therapeutic misunderstanding, arise during the testing of anticancer drugs. Surgery will not be included in the discussion that follows, despite being the first line of defence against a number of tumours, because it is uncommon for RCTs to be used to evaluate it. [10].

**IX.TESTING TARGETED AGENTS: SOME ETHICAL CONSIDERATIONS**

Conflicting evidence standards appear to be the root cause of the ethical problems just discussed in connection to the testing of targeted medicines. The question of whether and how the evidence required to demonstrate the effectiveness of a personalised therapy differs from that required to evaluate standard medications must be answered. The above-mentioned ethical problems can only be qualified and maybe resolved if this epistemic point is clarified. No informed opinion of the ethical concerns, according to medical philosopher John Worrall, "may be accepted without first taking an informed view of the evidential-epistemological ones," and this perspective appears to apply particularly well to the situation in question It would appear that unless the evidentiary peculiarities of personalised medicines establish a stable position in the evidential paradigm of medicine, the ethics of focused trials cannot be effectively decided. However, that is a completely separate and unanswered matter from whether this only needs a minor change or whether a paradigm shift is necessary.

**X. ETHICAL** **DILEMMAS IN PHARMACY**

Conflicts over moral behaviour or the application of moral principles lead to ethical quandaries. Because each side may have different moral standards, there may be ethical conflicts between pharmacists and patients, between pharmacists and doctors, and even amongst pharmacists themselves. Each side may hold a different premise, such as the respect for the individual vs a utilitarian viewpoint. The majority of ethical difficulties in healthcare involve physicians, but a rising number of other healthcare professionals, including pharmacists, are running into ethically challenging circumstances in their daily work. Our healthcare systems have evolved from being relatively simple to becoming extremely complicated in just one generation. Both the actual and perceived issue of legal liability has an impact on the activities taken by doctors and pharmacists as they work to maximise patient care while minimising legal risk. Under certain conditions, relationships between colleagues deteriorate. Risk-taking has become even more dangerous as a result of the increase in insurance costs for everyone, including those doctors who pay stratospheric rates [12].

It has become difficult for doctors and pharmacists to work together as a result of the exponential growth in knowledge about diseases, their treatments, and technological technologies. Information transfer between professionals and between professionals and patients is a concern. How much information is shared, who shares what with whom, and by whom? It gets harder to answer when duty of disclosure, patient rights, confidentiality, and truthfulness are taken into account. Key phrases Pharmacy; level of ethical reasoning; ethical conundrums. In order to provide efficient and effective patient care, it is crucial for doctors and pharmacists to understand and complement one another given the increased interdependence between the two professions This essay aims to update ethical dilemmas that pharmacists confront and their solutions to some of them [12].

Respondents to a survey about ethical quandaries were pharmacy school students and pharmacists in the state of Virginia. Students in their first professional year, their third college year, and their fifth college year were questioned. A random sample of pharmacists were asked for responses through mail, and a low response rate of about 30% was received. As a result, additional surveys are preferred and the results should only be viewed as indicative rather than conclusive. The ethical conundrums that were used in the poll were those that were purportedly encountered by pharmacists in practise, those that were debated in the literature, in a national meeting in the United States, or in different codes of ethics for pharmacy. Based on the similarity of the answers provided by the three groups, the answers to the multiple-choice questions were analysed and grouped [13].

**XI.THE SCOPE OF PHARMACY ETHICS**

Prior to 2002, pharmacists working in the industrialised world's health systems had shifted their focus from a predominate focus on the supply of medications to one that was increasingly clinical and advising. The transition away from the formulation and distribution of medications has been a protracted process and is far from finished. Policy directives describe important roles, primarily for community pharmacists, in prescribing and providing prescribing advice, in assuming accountability for therapeutic outcomes, and in contributing to patient care decisions within multidisciplinary healthcare teams. These roles are exemplified in England and Wales by the NHS Plan and Pharmacy in the Future. Due to this change in practise, pharmacists will not only confront unique ethical issues that are different from those experienced by their clinical colleagues but also need to be aware of and respond to similar ethical challenges as well. Additionally, community pharmacists work in both the public and private sectors. [14]For instance, in the UK, a pharmacist may work for a commercial company that has a contract with the NHS to dispense prescriptions, which is a public function. The pharmacist also works as a private-sector reseller of additional medications and other goods, whether or not they are related to health. Patients are both clients and recipients of sophisticated and complex treatment regimens every day for pharmacists operating in the community. Therefore, practising pharmacists need to be actively involved with and capable of handling ethical dilemmas resulting from the growing difficulties of "hi-tech" healthcare and its delivery in a corporate setting. The purpose of this examination of the literature is to determine the breadth and depth of the literature that documents such participation [14].

**XII. ETHICAL SCOPE IN PHARMACEUTICAL INDUSTRY**

The UK's core curriculum for medical ethics is a good example of a healthcare ethics issue spectrum, and it is backed up by original research done in the United States and classic texts on healthcare ethics. The interactions between medical staff and patients, family members, and the general public lead to several problems. Others result from limitations in balancing demand and costs, particularly in state-funded systems, or the research and development process that supports healthcare. In contrast to cases when the "patient" is actually a fully autonomous consumer in the private sector—for instance, a customer choosing their own over-the-counter medications—healthcare ethics have typically focused on patients within a healthcare system. Therefore, hospitals account for 17% of practise areas, followed by community (or retail) pharmacies (62%), and GP practises (perhaps 3%). Pharmacy practise has the potential to raise ethical issues that span the entire healthcare ethics spectrum, though not always to the same degree or level that may be encountered by medical or nursing practitioners, for instance, when negotiating the termination of a pregnancy or the switching off of life support.[15]

Community pharmacists, on the other hand, must daily combine their professional responsibilities as givers of advice and support to optimise the use of medicines with their financial responsibility to make a livelihood, nay, a profit, as they work in the private sector The organisational values and targets adopted by these businesses (and countless small local groups) to secure adequate profits for shareholders or owners may also have a significant impact on the capacity of individual pharmacists to exercise independent professional judgement and morality in Britain, where national multiples operate about 40% of community pharmacies. The two additional published collections that were missed by this assessment of the literature are not particularly pertinent to pharmacy practise. First and foremost, these were reports on work done in the pharmacy ethics teaching field. Further analysis of this information may be acceptable elsewhere given that most of it is meant to educate and support future pharmacists' moral awareness and cognitive abilities. The second body of work discusses the ethical conundrums that the pharmaceutical industry, third-world poverty, and access to medications present. As a result, it was determined that this was not covered by the current review.[15]

**XIII.APPLICATION OF ETHICAL CONCEPTS TO PRACTICE**

The vast majority of material on pharmacy ethics assumes that pharmacists are aware of ethical standards and then jumps right into applying ethical (and legal) principles to real-world settings In the UK, Nathan and Grim wade (1993) created an early form with eight scenarios "to test your law and ethics knowledge." In reality, all but one of the scenarios raised legal rather than ethical issues, and the eighth scenario, which dealt with the confidentiality of contraceptive prescribing, actually defended the "answer" by citing data protection and other laws The textbooks by Weinstein and Smith (see above) include examples of "practise scenarios" (including ethical challenges involving business) where it is required to first recognise the ethical issues that arise in a circumstance before being able to address them [16].

In the UK, Wingfield, Taylor, and Lee (1997), followed by Appel be, Wingfield, and Taylor (2002), recommended the use of a systematic "stepwise" method to decision-making in real-world scenarios where legal and ethical principles may conflict. (This can be summed up as: obtaining information, identifying problems, designating priorities and interests, producing actionable options, and selecting an option based on sound reasoning At first glance, two papers published in the American Journal of Hospital Pharmacy seem to be scenario-based studies alone, but they also incorporate philosophical analysis of the schools of thinking behind the conflicting "solutions" put forth by each of the two commentators [16].

Veatch (1990) makes deontological and utilitarian arguments in favour of the two options in a situation where the pharmacist must question the motivations behind a change in a physician's prescribing before coming to the conclusion that obligations like the "ethics of respect" for the patient's rights should probably take precedence.

Veatch (1993) also compares earlier paternalistic concepts of secrecy with more contemporary ideas on respect for autonomy in reference to a patient who refuses to reveal significant symptoms to his doctor. The following sections serve as examples of how ethical ideas are applied to pharmacy practise, frequently in works that are not particularly intended to do so [16].

**XIII.** **CONSENT AND CONFIDENTIALITY**

Confidentiality and the related idea of consent to use and disclosure of patient information are frequently cited in literature on pharmacy ethics. A French study looked into how 15 hospital pharmacists responded to scenarios that potentially jeopardise patient privacy. All of the study's pharmacist participants argued that they did not have any instruction in biomedical ethics throughout their bachelor years and did not have enough practise to feel comfortable handling these circumstances The primary remedy was considered to be turning to a manual of best practises.[17] The same issues, as well as a solution, were raised in a later UK study on the challenges faced by pharmacists who provide medical information. Traditionally restricted to other healthcare professionals, such services are now being used by the general public. Conflicts between pharmacists who prefer to retain sensitive information for more appropriate disclosure than by phone and those who contend that since the majority of the requested information is in the public domain, it should be made available upon request were noted in the study. Again, out of 151 centres for medicine information that provided feedback, more than half said that the pharmacists providing the service had not been trained in "ethical considerations" even though more than 70% of them had obtained postgraduate clinical degrees [17].

The "situation and potential solutions" method mentioned above is used in other published materials on consent and secrecy Haddad talked about a case in the US where a patient had given a strict order not to tell the patient's doctor about material that appeared to pose a major threat to his health. According to her, the obligation to maintain patient privacy is based on two core ethical principles: respect for the patient's right to autonomy in making medical decisions and faithfulness, which is implied in the pharmacist's tacit promise to remain silent if the patient so chooses in this scenario, it is believed that expressed wish to be the deciding factor. Disclosure might have been a different course of action if the patient had remained silent. In a series of scenario discussions, other examples of information given by the patient to the pharmacist on a confidential basis were included in the UK. These examples included purposefully refusing to take the prescribed medication or hiding information that might impair the efficacy of the medication [17].

The current author incorporated a confidentiality scenario regarding the publication of patient records after death in a series of articles analysing the process of ethical decision-making to highlight the general character of ethical obligations outside statutory law. Other publications have taken a more descriptive tack, outlining the effects of practise modifications or revisions to the Code of Ethics on secrecy. Another study looks at how using a phone link and a buffer zone to keep waiting patients away from the patient consultation in process can actually provide both security and privacy. The majority of the literature on secrecy in pharmacy has been produced since the introduction of electronic communication. There has been a huge increase in statutory regulation on both sides of the Atlantic, and there has been a lot of discussion about how to deal with the potential and hazards that "tele pharmacy" presents [17].

Pharmaceutical corporations can use "data mining" to focus their drug marketing campaigns more profitably and efficiently by purchasing electronic patient medication information. The state was defeated, mostly because the data processor could demonstrate that the patient's identity had been successfully wiped off. In Canada, the Medical Association called for legislation in response to similar activities by the same data processor to safeguard physician anonymity. This report makes mention of British Columbia's unilateral decision to forbid pharmacies from contributing to the collecting of this data and replace it with a province-wide, online pharmacy system. Ironically, while such information is currently available to the NHS in the UK through its state reimbursement systems, it has not yet chosen to use it in this manner In the UK, the ability to write and send electronic prescriptions is still in its infancy, but preliminary research indicates that consent and confidentiality will be problematic issues. Real and potential opportunities to control prescription costs or enhance patient health outcomes are presented by the capacity of state systems to handle personal health information, such as the NHS in the UK or employment-linked PBOs in the US These possibilities also create tensions between organisational effectiveness and patients' rights to refuse consent to such data manipulation. These rights are probably more concerned with the right to accurate information than the right to opt-out [18].

A US operation that exploited prescription information to sell a new medicine to patients without their previous knowledge sparked a media backlash in 1998. Earlier acknowledgment that the interests of pharmacy providers, such as business owners or Pharmacy Benefit Managers (PBMs), may differ from those of pharmacy practitioners is highlighted in an editorial examining this development. the privacy risk brought on by huge numbers of employees having access to certain data sets in behavioural (mental) health PBMs. The number of online pharmacies is increasing everywhere. The majority of discussion centres on the financial ramifications for more established "brick and mortar" pharmacies, however Landis (1999) and Spooner (1999) explain the privacy and confidentiality ramifications of email exchanges in a US news article (1999). the privacy risk brought on by huge numbers of employees having access to certain data sets in behavioural (mental) health PBMs. The number of online pharmacies is increasing everywhere. The majority of discussion centres on the financial ramifications for more established "brick and mortar" pharmacies, however Landis (1999) and Spooner (1999) explain the privacy and confidentiality ramifications of email exchanges in a US news article (1999) [18].

**XIV.LEGAL AND ETHICAL ISSUES REGARDING SOCIAL MEDIA AND PHARMACY EDUCATION**

New social media platforms like YouTube, Facebook, Twitter, and Blogger have seen a sharp rise in popularity in recent years. Older generations are fast joining the ranks of social media users, but younger generations were predominantly the early adopters of these technology. 400 million people use Facebook alone, with users 35 and older expanding at the quickest rate. The social communication paradigm is shifting from the conventional face-to-face or telephone model to one that leverages a range of Web-based social media tools, in part due to the popularity of these programmes. These technologies are now so pervasive that they are starting to disturb parts of our social structure [19].

According to a remark made by Duncan in 2008, the past two decades in particular have been defined by exponential advancements in technology, particularly by individual access to ever-sophisticated electronic gadgets for information retrieval and communication. Concomitant changes in cultural mores relative to the use of such devices have widened the intergenerational gap, affecting all institutions, including law and education. While these disruptions have spread across society as a whole, there are some specific issues of particular relevance to professional education [19].

Many of the hazy concerns have also been improved by conversations in research publications and at professional conferences. Many students, faculty members, and administrators are not yet completely aware of the complexity imposed upon schools as a result of the aforementioned paradigm shift because this field of research is still quite young. In order to help pharmacy faculty members and administrators understand this developing area of concern and avoid potential legal entanglements, the authors of this article review and explain the legal and ethical issues connected with social media use. They then offer recommendations for pharmacy administrators and faculty as a whole [19].

**XV. LEGAL ISSUES**

In matters involving the use of social media, a variety of fundamental rights guaranteed by the US Constitution may be at stake, including freedom of speech, concerns with search and seizure, the right to privacy, and the denial of due process. A quick overview of these topics could serve as a starting point for a discussion of the problems as they relate to social media [20].

Freedom of speech is one of the six rights granted to citizens by the First Amendment of the US Constitution, which also states that Congress cannot pass legislation restricting the free exercise of one's religion, banning its practise, restricting one's right to free speech or the press, or restricting the right of the people to peacefully assemble and petition the government for redress of grievances. Issues with free speech only arise when the government is engaged. The standard was established that student speech may only be restricted when it materially disrupts or substantially interferes with a school's activities in one of the key US Supreme Court cases in this area [20].

In the Tinker case, the Supreme Court ruled that "conduct by the student, in class or out of it, which for any reason - whether it stems from time, place, or type of behaviour - involves substantial disorder or invasion of the rights of others, or which involves materially disrupts class work, is, of course, not immune by the constitutional guarantee of freedom of speech." When a school makes the claim that a student has participated in disruptive speech that the school would like to stop, this criterion should be used [20].

"It does not follow... that simply because the use of an objectionable form of communication may not be restricted to adults expressing what the speaker considers a political point, the same latitude must be granted to youngsters in a public school," the Supreme Court ruled. The school board has the authority to decide whether language is appropriate for use in the classroom or during school assemblies. Fourth Amendment concerns of search and seizure arise in cases involving social media use No warrants shall be issued unless there is probable cause, is supported by an oath or affirmation, and specifically describes the location to be searched as well as the people or things to be seized. It is forbidden to infringe the people's right to be free from arbitrary searches and seizures of their person, property, and effects. Such problems can arise if administrators of the university try to see a student's social media conversations or the tools they use. When administrators of the institution inquire about a student's social media communications, the Fifth Amendment may be implicated. [21].

This Amendment also creates rights to due process. No person shall be held accountable for a capital, or otherwise infamous crime, except in cases arising in the land or naval forces, or in the militia, when in actual service in time of War or public danger; nor shall any person be subject to having his or her life or limb endangered twice for the same offence; nor shall any person be required to testify against him or her in any criminal case. The Fourteenth Amendment expands the scope of constitutional due process rights by extending them to non-citizens due to the threat that a state government or an entity that is a part of it, such as a public university, may take action stated in the Amendment: Citizens of both the United States and the State in which they currently reside are all those who were born or naturalised in the United States and fall under its authority. No State shall make or enforce any law limiting the rights or privileges of citizens of the United States; no State shall infringe upon the life, liberty, or property of any person within its jurisdiction; no State shall deny to any person within its jurisdiction the equal protection of the laws. [21].

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