Ethics and On-Line Research Methodology

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Abstract
The ethical concerns and strategies involved with using computer technology for research purposes are still being debated. The purpose of this paper is to explore specific areas of concern with on-line research regarding recruitment, informed consent, privacy and confidentiality, deception, and avoidance of harm. Starting from a historical perspective, an analysis of the impact on various stakeholders is discussed along with strategies to address and resolve ethical issues associated with on-line research.

Key Words: On-line research, ethical principles, Internet, virtual community, virtual research, social work

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1. Introduction

The Internet offers a multitude of communication opportunities. With the advancement of computer technology in the 1980s to develop simple databases and statistics, Reamer (1986) raised ethical concerns with privacy issues and the misuse of privileged information. During the 1990s, improvement of computer hardware and programming brought many developments. Advanced databases, assessment and screening capabilities, electronic e-mail, high-speed access, and the ability to use the Internet as an adjunctive learning tool are just some examples (Birnbaum, 2004; Giffords, 1998). Using these technological advancements for research; both qualitative and quantitative, has created significant prospects for obtaining information from specific populations, target groups, and communities previously obtainable or only with considerable cost, time, and effort or not at all (Buchanan, 2000, Brownlow & O'Dell, 2002).

The web page for The American Psychological Society (APS, 2008) designates a link under on-line psychology experiments to various Internet-based research projects. During the course of obtaining resources, the author of this paper was able to connect to a research project regarding personality traits. In the age of cyberspace, the use of the Internet in social work research is inevitable. However, policies related to the ethics of methodological Internet research are still in the developmental phase. Differing perspectives on what ethical framework should prevail are still being hotly debated (McCleary, 2007; Israel & Hay, 2006; Pauwels, 2006).

The present paper focuses on five areas of concern specific to on-line or virtual research; (a) recruitment and enrollment of participants, (b) informed consent, (c) protection of privacy and confidentiality, (d) deception, and (e) avoidance of harm. Starting from a historical perspective, this paper will analyze the impact on stakeholders including: participants, researchers, and the research funding sources. Strategies will be suggested to address and assist in resolving ethical issues with this venue.

2. Historical Perspective

The Internet is a relatively new medium in the world of research. Prior to its development, behavioral research was primarily based on paper and pencil collection of data, mail surveys, and face-to-face interviews. Ethical considerations with privacy, informed consent, methodologies, experimental control, debriefing, and communication were thus more easily controlled. Pre-internet, behavioral research was more limiting not only in the difficulty of reaching certain populations and data collections, which required labor intensive efforts, but also in the cost of conducting research experiments. As a result, many groups of specific populations were under-researched or limited in the scope of availability (Flicker, Haans & Skinner, 2004). The capability to do on-line research has allowed for the transcendence of "geographical, physical and time barriers that previously limited the scope and content of individual research studies, making accessible the actual communications and artifacts of individual Internet users" (Stern, 2003, pg. 252).

Waskul and Douglass (1996) noted that the social and behavioral science fields found the computer a viable means for expanding research opportunities. The first Internet psychological experiments involving manipulated variables were completed via by Welch & Kranz in 1996 (Musch & Reips, 2000). Home Internet use in general has expanded exponentially and as of September 2008, more than two hundred twenty million Americans used this form of communication in their homes or at work, while forty million mobile phone subscribers had Internet capability (Nielsen/NetRatings, 2008). Internet usage has extended to virtually all areas where communication exists. Data sources not only include Internet web-pages and e-mail, but have expanded to message boards, electronic mailing lists, newsgroups, blogs, discussion groups, chat rooms, instant messaging and virtual worlds that address a seemingly unlimited number of subjects; information that previously was not available. The virtual community, with its advancements, however, has also brought additional ethical concerns with human participation and Internet research (Cwikel & Cnaan, 1991; Childress & Asamen, 1998; Giffords, 1998; Flicker et al., 2004).

3. Scope of the Issue

While there are multiple advantages in conducting human participant research using the Internet, ethical issues surrounding recruitment, enrollment, informed consent, protection of privacy and confidentiality, the use of deception and avoidance of harm must be sufficiently addressed for ethical compliance by an Institutional Review Board or IRB (Azar, 2000; McCleary, 2007; NASW, 2008). The responsibilities of the IRB are listed in the Code of Federal Regulations (CFR) 45.46 (U.S. Department of Health and Human Services, 2005). The ethical foundation of these regulations is taken from the Belmont Report published in April 1979. The Commission for the Protection of Human Subjects of Biomedical and Behavioral Research developed the Belmont Report to summarize the basic ethical principles identified by the Commission during a conference held at the Smithsonian Institute's Belmont Center in February 1976. Based on this report, ethical protection of human subjects in research adheres to the principles of how human subjects are to be treated in a research setting. Specifically, the three principles of the Belmont Report are respect for persons, beneficence, and justice (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979). The responsibility of the IRB in authorizing research studies centers on these three principles for which the potential benefits should outweigh the probable costs to the subjects (McCleary, 2007). Efforts to understand and address ethical issues of Internet research have been approached, but there remains no set formal standard of practice or official guidelines in this particular area. Lacking such formal standards, ethical dilemmas that occur in the course of Internet research are best resolved by applying the ethical principles of the Belmont Report (Childress & Asamen, 1998; Flicker et al., 2004; Keller & Lee, 2003).

3.1 Recruiting and Enrolling Participants

Recruitment of individuals for research studies via the Internet is impacted by the manner in which enrollment is done and who will choose to participate. Dependent upon this point is the type of advertising used to recruit and the accessibility of the study (Hewson, Laurent, & Vogel, 1996; Nosek & Banaji, 2002). Open accessibility will provide the broadest sample of participants but brings with it the disadvantage of trying to control who is recruited and the nonrandom nature of this type of sample. Specific accessibility allows for setting criteria which individuals must meet before being allowed to participate and may include variables such as age and gender as conditions for selection. Invited accessibility is designed to control participation to a randomly selected group of individuals through the use of unique access codes and a specific link to a web site. This procedure also allows the researcher to track and verify that an individual only participates once in a study (Nosek & Banaji, 2002).

Widespread recruitment through the registering of a research web site with popular search engines may not be adequate to obtain sufficient samples in a relatively short period of time. This process may be enhanced with the use of postings in newsgroups and mailing lists. Traffic can increase if interest is generated and the Web site address is forwarded to others. The downside to this approach is the possible loss of control over what is stated about the web site. This poses as a risk for having misleading information being passed on and leading to possible sampling bias or even worse (Nosek & Banaji, 2002; Birnbaum, 2004; Childress & Asamen, 1998).

Targeted advertising directly to electronic mailing lists or news groups will contact specific populations who may have an interest in the area to be studied. Advertising by this method allows for an increase in the control over who receives the information and how it is presented. Often, it is accompanied by screening measures such as a password to assure that a web site will only be visited by individuals who have been directly contacted (Nosek & Banaji, 2002; Benoit, Jansson, Millar, & Phillips, 2005; Hewson et al., 1996). However, once information is received from a mailing list, there is no control over to whom the message is forwarded. The type of advertising and accessibility employed for the study can affect participation of subjects and their commitment to the study. Bias within populations that have low Internet access (e.g., lower-income, minorities, and extremely rural populations) can place limitations on the reliability of an Internet study (Nosek &Banaji, 2002; Childress & Asamen, 1998).

The Belmont Report directs researchers to show “respect for persons” by ensuring the autonomy of individuals and their right to self-determination. Under the principle of justice, researchers need to consider the role of social, racial, sexual, and cultural biases in the selection of subjects. Without face-to-face contact, the selection process can be difficult, but limitations within the virtual community can be reduced by how the recruitment process is approached (Nosek & Banaji, 2002; McCleary, 2007).

3.2 Informed Consent

Informed consent involves the capacity of individuals to choose, to the best of their ability, whether to participate in the study based on an accurate description about what will happen to them in the process of the research. While this may appear to be straight forward, informed consent cannot occur without three fundamental elements: (a) information that allows for an understanding of what is involved in the research, including the possible risks, (b) comprehension of the information that is presented, and (c) recognition that coercion is not used to control or influence participation (McCleary, 2007; Israel & Hay, 2006; Azar, 2000). This can be accomplished via e-mail or as a direct link during the enrollment and registration in the study; however, there are no concrete assurances that survey respondents either read and/or understand on-line consent forms (Keller & Lee, 2003; McCleary, 2007; Azar, 2000). E-mail correspondence for informed consent may seem intrusive and limit anonymity (Eysenbach & Till, 2001; Birnbaum, 2004). Several authors, (Madge, 2007, Childress & Asamen, 1998; Michalak & Szabo, 1998), encouraged the use of e-mail to offer the opportunity for prospective participants to ask questions pertinent to the project, decrease the chance for coercion, and allow for the option of withdrawing from the study. In a report published by the Board of Scientific Affairs Advisory Group (Kraut, Olson, Banaji, et al., 2004) in an effort to prevent minors from participating in a study, recommendations were made to have subjects be asked information that is generally applicable only to adults or directing them to register with a trusted web site authority that requires significant verification. Even with safe guards in place to decrease the likelihood of underage participants and ensure that subjects have read the consent, there is no concrete method of assurance to eradicate this risk (Mc Cleary, 2007, Kraut, et al., 2004).

Considerable discussion has taken place regarding the need for informed consent, arguing that the majority of web sites, discussion boards, and chat rooms cannot be considered *private* spaces but are construed as *public domains*. Madge (2007) notes that the boundaries of what is considered private or public is “blurred and fuzzy” with no internationally binding agreement determining whether on-line messages are considered private correspondence or if *lurking* in chat rooms or discussion boards is construed as a defensible online research methodology. This paradigm was reflected by Herring (1996) who viewed posts on communal forums as public data. Researchers should take into account the purpose of the postings and discussion forums in an effort to gauge whether participants view their communications as public or private (Sixsmith & Murray, 2001). Often e-mail participants post from home or work with the mistaken belief this type of communication is not traceable and therefore private. With self-help and support groups, disclosure may hinge on the belief that if the material posted is being observed for research, the site cannot be trusted and alter the participation and content of the discussions (Sixsmith & Murray, 2001).

Cyberspace has generated great debate as to what the expectations of privacy may be among different virtual venues. As classified by Herring (1996) in naturalistic research, there is the need to avoid disturbing the order of the research object as much as possible; while in critical research, the participants’ performance is tested under specific principles such as fairness, justice, or freedom from ideological distortions. This leaves the researcher in a difficult position if informed consent is sought. In justifying not using informed consent, Herring explains that significant changes in subjects’ behavior would have occurred had informed consent been sought with on-line studies involving the virtual population. In an article related to ethical issues with on-line visual research, Pauwels (2006) notes that choosing the web as a means of public communication implies the role of being a mass communicator, thus alleviating the need for informed consent. This sentiment is echoed by Pittenger (2003) in that *virtual communities* are essentially public arenas, which should not uphold the expectation of privacy. Garton, (1997) views researchers as “only participating in the electronic equivalent of hanging-out on street corners…where they would never think of wearing large signs identifying themselves as ‘Researcher’ ” (pg. 2 on-line).

Based on the ethical principle of respect for persons, the need for informed consent from participants is not entirely clear when applied to on-line research in varying available venues. The concept of obtaining informed consent from a consequentialist perspective may not be realistic given the vast and complex network of information systems available on the Internet (Bassett & O'Riordan, 2002). The opposing position suggests the use of e-mail material for research purposes without the consent of the person who wrote it could pose potentially damaging threats to on-line research as members of a group may view this as an invasion of their personal privacy. Perceptions of this sort may lead to distrust of e-mail sites, discussion boards and other forms of on-line communication (Sixsmith & Murray, 2001; Elgesem, 2002). The NASW Code of Ethics adheres to the value of *integrity*, upholding the ethical principle of trustworthy behavior (NASW, 2008). The issue of informed consent is an integral part of the social work professional standards and observance of these principles needs to be vigorously reviewed when considering on-line research projects.

Bakardjieva and Feenberg (2001), pose the concept of *alienation* and not privacy, as the key ethical considerations in virtual or on-line research. These researchers propose a collaborative model and view participants as engaging in a partnership, thereby facilitating research development. The interests of the participants are minimized or restricted without their informed consent. This prevents what can be valuable interactions with their capabilities using Internet correspondence. In her research of a breast cancer on-line discussion forum, Sharf (1997) indicated that while she was primarily lurking on this site, she did occasionally post messages; always indicating that she was a researcher but also held a personal interest with the topic. Sharf secured permission from each individual to use quotes in her research project citing an ethical responsibility due to the sensitive nature of the dialogue and discussions.

The Code of Conduct set by the APA (1992) would convey that in research, informed consent is not necessary if the observations and recordings of behavior are completed in a public place and are not used to harm the participants of the study. Without set standards and guidelines that are consistent but lack actual legal case review, the IRBs in one institution may view informed consent as being unnecessary, while IRBs in other academic communities may find it unacceptable not to obtain some type of informed consent (Pittenger, 2003; Eysenbach & Till; 2001, Israel & Hay, 2006; McCleary, 2007). Clearly, the issue of informed consent requires further study.

3.3 Protection of Privacy and Confidentiality

Although the Internet does afford a perception of anonymity, this may be false in certain circumstances, primarily in how the data is transmitted and stored (Nosek & Banaji, 2002). In addition, there are distinguishing differences between anonymity and confidentiality. The term anonymity implies secrecy, obscurity, and without a name; confidentiality denotes privacy and discretion (Webster's, 1973).

Many research designs may not require identifying information and therefore, Internet research can result in complete anonymity, excepting if an individual's screen name or e-mail address is published. There are research projects that do require some form of identifying information and under these circumstances the use of data transmission, storage and the possibility of post study interaction with participants require protection of confidentiality. The use of a portable diskette or flash drive can allow for easy transfer of data and afterwards specialized software to remove any remnants of files from a computer's hard drive. Conducting a webpage-based study with the use of a secure server line technology utilizes encryption methods that encode information from a participant, making it meaningless to someone who might intercept this data in transit. To minimize the identification of individuals and increase the prospect of maintaining anonymity, pseudonyms can be used by participants. Also, the name and locations of lists and newsgroups along with the use of exact quotes should be avoided. Implementation of identifying labels, algorithms, and separation of identifying information from transmissions can be used to protect confidentiality and thus increase the level of privacy of the participants in virtual communities (Nosek & Banaji, 2002; Pittenger, 2003, Sixsmith & Murray, 2001; Keller & Lee, 2003; Israel & Hay, 2006).

Pittenger (2003) issues a call for concern with how research data is stored, noting that a state's open records law may allow for contents of e-mails and other correspondence to be considered a matter of public record. While this may be specific only to certain states and public institutions, it presents ethical considerations along with possible legal ramifications.

Israel and Hay (2006) suggest the option of offering limited assurances or extended confidentiality. In their book, the authors provide examples of how the legal system may ultimately cause compromise of confidentiality of subjects in research projects with guidelines to minimize the effects of such action. Pittenger (2003) also urges the researcher to obtain the specific rules of a virtual community and establish guidelines relating to the issue of respect and privacy with communications by way of an informed consent.

Ethically and morally, social work researchers have an obligation to uphold the NASW Code of Ethics, (NASW, Sections 5.01, 5.02 and 6.04, 2008) but legally may find themselves in a state of conflict and possible violation of the law. Consider these aspects when looking at methodologies in research with the collection, analysis and storing of data decreases possible breaches of confidentiality with legal interventions. This awareness helps to minimize the discrediting of the study, the researcher, and that of the institution or agency with which he or she is connected (Israel & Hay, 2006; Pittenger, 2003).

3.4 Deception

Deception is the practice of deliberately concealing the true purpose of a study to the participants. Lying, manipulation, misleading or exaggerating information are forms of deception that may be used in covert research projects where revealing the true reasons for the purpose of the study would jeopardize the goal of the research. Israel & Hay (2006) pointedly present cases such as the Tuskegee study, Humphrey's Tearoom research, and Milgram's experiments in the 1960s as examples of how the use of deception can produce adverse situations, sometimes with severe consequences for the participants as with the Tuskegee study. Theoretically, under the principles of avoiding harm and respect for persons, deception should not be involved in research, but this has been argued both ways by a number of authors. Controlling the research environment through the use of deception can facilitate the validity of a study. Operationally, Burger (2009) revealed this in his effort to partially replicate Milgram's experiment on obedience. The use of deception has been termed justifiable under certain circumstances within the Internet community. This lends itself to the idea that postings to public forums with chat rooms, discussion boards, and other areas do not fall under the heading of private domain (Madge, 2007; Pittenger, 2003). Keller and Lee (2003) agree with the premise that mandating informed consent will be counterproductive and pose risk in the form of academic censorship under these circumstances. While researchers may not intend to use deception, on-line research, extending over a period of time and/or involving high turnover forums such as chat rooms or discussion boards), may cause inadvertent covert deception as new individuals enter a forum and existing subjects forget the basis of previous discussions (Madge, 2007).

Another argument against the use of deception in research on the Internet is the inability to allow for adequate follow up with dehoaxing or debriefing. Judging reactions to manipulations is nearly impossible with on-line interaction. Normally, debriefing or dehoaxing is done after the research process with onsite studies in face-to-face meetings or with written reports, which makes visual observation of reactions an important part of the procedure. Since the Internet does not allow for face-to-face debriefing, this may become an issue for IRB committees (Madge, 2007). In addition, individuals who choose to end participation in the research process either deliberately or due to computer error would not have the opportunity to be made aware of available follow-up without access to a dedicated website or on-line materials. Further, those subjects who dropped out would not have the capability of being made aware of research results from the information gathered during the study. In situations with cross-cultural research, debriefing may be complicated due to the need for sensitivity with the cultural make-up and values of the particular research venue utilized (Pittenger, 2003, Madge, 2007, Keller & Lee, 2003).

Flicker et al., (2004), and Nosek and Banaji (2002) address concerns with participants who are either unknowingly or knowingly misrepresenting who they are or having multiple users be represented as a single participant in effect a case of reverse deception. Both articles offer suggestions to decrease this incidence with the use of asking the same question in multiple formats or repeated at intervals throughout the study and then checking for discrepancies. Implementing the use of more personal identifying information, while seen as an option, is also viewed as being intrusive; increasing the likelihood of anonymity and confidentiality concerns. This avenue may also conflict with NASW's Code of Ethics, (NASW, Section 5.02, 2008)

Applying the deontological perspective, deception is not an acceptable path and needs to be a consideration when deciding upon the course of methodology. The act of deception may violate the Belmont principles of respect for persons. The lack of autonomy and self-determination without the use of informed consent and beneficence limits the ability to predetermine the types of harm that may ensue without proper debriefing or dehoaxing. The long-term ramifications in the use of deception in research are not known and problems associated with its application in on-line studies are at variance with more traditional methods (McCleary, 2007; Madge, 2007).

3.5 Avoidance of Harm

Researchers have responsibility to protect participants from intended and unintended harm resulting from the research process and results. On-line research presents some unique concerns as participants cannot be seen by researchers, therefore eliminating visual and auditory cues related to distress. Stern (2003) raises the issue of the researcher's responsibility when encountering distressing disclosure in the process of an on-line study. She raises concerns about the principle of beneficence in contrast to the American value and constitutional right of free speech, asking which value should be held above the other. The lack of visual cues and the inability to verify the level of acuity still do not relieve the researcher from some form of response in most cases (Buchanan, 2000). Difficulties in how to address the problem arise from the circumstances of when the disclosure was written, the level of anonymity of the discloser, and the site where the discovery was found. Public forums such as message boards, blogs, and chat rooms allow for anonymity but also for public access, which may actually increase self-disclosure by Internet users and the potential physical or psychological stressors research participants may experience because of it are often unknown. Qualitative research designs, especially ethnographic forms, may be especially vulnerable to these concerns (Bier, Sherblom, & Gallo, 1996; Childress & Asamen, 1998; Keller & Lee, 2003, Buchanan, 2000).

The issue of harassment or "flaming" which Madge (2007) describes as "hostile and aggressive interactions on-line" can extend itself to verbal abuse or threats and has the potential for libel (pg. 664). O'Sullivan and Flanigin (2003) note because of different expectations and experiences, what is acceptable will vary between individuals. Flaming can also be a source of harassment or cyberstalking, which lends itself to moral implications of possible harm. Researchers who engage in controversial studies may find themselves the recipient of harassment. Such was the case with Raphael Golb who used multiple

Internet aliases to attack and attempt to discredit scholars over the archeology of the Dead Sea Scrolls (Kolowich, 2009). Concerns about negative consequences give rise to assessing would-be risks of harm against the potential benefits when determining the methodology of a research study. The accessible nature of web sites combined with the capability for anonymity make the potential for negative effects more difficult to control when compared to off-line research (Stern, 2003; Madge, 2007; Elgesem, 2002; Waskul & Douglas, 1996).

From a positive perspective, Nosek and Banaji (2002) focus on how the physical absence of a researcher may give greater freedom for a participant to terminate a study, thus eliminating perceived pressure to continue in a situation an individual may find “uncomfortable or unrewarding” (pg. 164). The implicit social norm of politeness is decreased in this instance and helps to protect the participant from feelings of coercion.

Avoidance of harm incorporates all of the ethical principles of respect for persons, beneficence and justice identified in the Belmont Report (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979). The previous issues addressed in this paper represent the underpinnings of this final category. The unique nature of on-line research requires careful consideration before engaging in studies that can not only impact individuals, but have far-reaching consequences within a virtual community (McCleary, 2007).

4. The Impact on Stakeholders

The use of the Internet for on-line research with human participants is still evolving and the long-term impact is difficult to determine as technology continues to rapidly advance, further complicating this process (McCleary, 2007; Elgesem, 2002).

4.1 Participants

The on-line community is composed of various individuals and groups of individuals. Reactions to researchers by participants are variable and appear to depend on the disposition and type of research involved. On-line support groups may view recruitment of participation as invasive in nature, while individuals posting blogs and interacting in chat rooms can view engaging in a research study as a setting for being able to offer opinions and thoughts through anonymous channels (Childress & Asamen, 1998; Madge, 2007). Eysenbach & Till (2001) address concerns as to whether research participants view on-line research as a type of voyeuristic activity, reacting with hostility at the idea of having a support group viewed as “a fishbowl for a bunch of guinea pigs” (pg. 1104). Describing a misguided estimation of risk, Bassett and O’Riordan (2002) suggest there is no hard line of delineation related to what is considered public and private domains with privacy related to the Internet.

Culturally, researchers may find themselves in a position to interpret comments from individuals about whom they have little or no knowledge. This can foster resentment of a virtual community who perceive such activity as being underhanded and negative. Misinterpretation can also lead to alteration of meaning, thus changing the dynamics of a study (Sixsmith & Murray, 2001; Madge, 2007; Elgesem, 2002).

Positive changes can also pose ethical dilemmas as on-line research may offer access to information, education or technology not otherwise available to certain populations or marginalized groups. Bier et al., (1996) reported positive changes with self-identity, education and a sense of community with lower-socioeconomic groups of individuals who were provided with computers and Internet access for a research project. An unexpected consequence of this study was related to the ethical responsibilities associated with having to retrieve the borrowed computers from the participants at the completion of the project. This resulted in the elimination of their means of contact, thus adversely affecting their connection to others.

4.2 Researcher

Faced with a barrage of ethical considerations, researchers using Internet studies have few precedents from which to judge best practice structures of methodology. While computer technology became more available in the 1980s, information technology expanded exponentially in the 1990s. E-mail capability, chat rooms and other forums of on-line communication have opened up new territory for social scientists with a wealth of possibilities in exploring fresh avenues of potential research (Reamer, 1986; Birnbaum, 2004; Nosek & Banaji, 2002). Basic design issues, increased opportunity for loss of experimental control with virtual laboratories, unanticipated encountering of distressing information and reactions or unexpected consequences compel researchers to re-evaluate ethical responsibilities with Internet research (Bier et al., 1996). Buchanan (2000) suggests the virtual researcher may have an ethical obligation to an even higher standard of conduct.

The Internet has permitted access to populations previously unattainable or inaccessible via past research paths. Researchers have the ability to study individuals in the bio/psycho/social contexts that would have been highly impractical using traditional research methods. Without clear guidelines as to what constitutes public or private forums, researchers are left to reflect on their own ethical principles to determine whether conduct with informed consent, confidentiality and deception will meet the standards imposed by the Belmont Report. As Madge (2007) declared, there continues to be widespread differences of opinion as to what is considered appropriate ethical conduct with the Internet.

4.3 Research Funding Sources

Funders of research need to consider the difficulties that may be encountered but unanticipated by researchers. Legal concerns by academic institutions may influence restrictions of Internet research thus affecting funders on whether this would justify financial support of projects if the benefits derived from the research would be inhibited. Pittenger (2003) notes that poorly conceived methodologies and inaccurate conclusions, because of unjustified inferences, may result in damages to those who pay for the research, either directly or indirectly.

5. Strategies to Address Concerns and Resolution of Ethical Dilemmas

Ambiguity, uncertainty and disagreement are inevitable where clear boundaries and guidelines do not exist (Madge, 2007). However, strategies to address current and potential ethical dilemmas have been well documented and addressed to varying degrees throughout this paper. In addition, Birnbaum (2004) offers a detailed description on techniques and methodology on human research via the Internet.

Using the principle of respect for persons, Michalak and Szabo (1998) discussed the need for having researchers identify themselves, their affiliation, and the purpose of study when recruiting subjects. Inquiries and comments from participants can be used to verify legitimacy of the study along with providing the opportunity for feedback by subjects, which can facilitate future research methodology. Flicker et al., (2004) and Madge (2007) assert that researchers need to consider the autonomy of individuals when considering informed consent. Tantamount to this is the need for protection of privacy, confidentiality within the researcher's ability, and protection from harm through the removal or disguising of identifying data. Assurances must be made to potential subjects that their participation in a study is voluntary and confidential and can be discontinued should physical or psychological stress occur during the informed consent process. Accommodations need to be in place either via a web link or direct contact information. Collection of qualitative and quantitative data can be relatively easy on Cyberspace but the amount of information needs to be reasonable.

Variables with Internet research may be more difficult to control compared to more traditional research studies. Geographical, cultural and linguistical considerations should be calculated as much as possible in the design of the research study. Sociological issues, where cultural factors could influence the data, and thereby impact the results of a study should be examined. An unknown or unanticipated event such as encountering disturbing or distressing information while conducting on-line research not only entails ethical responsibilities in the need to respond, but legal accountabilities in some instances. Researchers are required to consult with the IRB when submitting a research proposal. They should also consider consulting with other researchers involved with on-line studies. Both methods can decrease negative and unanticipated consequences (Michalak and Szabo, 1998; Childress and Asamen, 1998; Stern, 2003; McCleary, 2007).

6. Conclusion

The Internet has an increasing impact on almost every aspect of society. With this relatively uncharted but enormous frontier, the Internet presents valuable possibilities and opportunities that can result in a positive impact in the research world. The avenue of virtual research also has far-reaching and unexplored consequences. While guidelines on ethical conduct have been offered, there are no set standards in place to determine specific boundaries and regulations. Complicating the equation even further is the rapidly explosive onslaught of technological advances. In response, IRBs need to develop a framework to assist researchers in determining ethical implications utilizing the principles of the Belmont Report (Azar, 2000). How IRBs develop guidelines for Internet research will be determined by whether one follows the deontological or utilitarian approach to ethical perspectives. As further data is collected and more publications emerge, the establishment of these formal guidelines for Internet research can be instituted. (Michalak & Szabo, 1998; Flicker et al, 2004; McCleary, 2007). All research involving humans, whether done in the traditional manner or in cyberspace should embody the basic ethical principles of preserving the integrity and dignity of the individuals involved- which is echoed in the APA Code of Conduct and the NASW Code of Ethics (APA, 1992; NASW, 2008). This embodiment must be applicable to both quantitative and qualitative methodological approaches. By following guidelines and the ethical principle to *do good* with beneficence, the integrity of both of the researcher and the field of social work are maintained.

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