2016

Mind the Gap: the Importance of Pluralistic Discourse in Computing for Mental Health

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ABSTRACT

A large amount of HCI research leverages studies from psychology to try to understand how humans work. Unfortunately, there is often a disconnect between the tightly-controlled laboratory studies being referenced and the application of this knowledge in practice. At the same time, many mental health practitioners are beginning to turn toward computational tools to help stretch limited resources and support equitable access to mental healthcare. These efforts could be dramatically enhanced by leveraging what the HCI community has learned about promoting active engagement and designing unobtrusive interfaces. By facilitating collaboration between HCI researchers and practitioners in the field of human services, we are working to understand how our historically separate disciplines might better be able to support one another and together reimagine what constitutes a therapeutic intervention in the 21st century.

Author Keywords

HCI, mental health, social work, positive computing, interdisciplinary collaboration.

ACM Classification Keywords

H.5.m. Information Interfaces and Presentation (e.g. HCI): Miscellaneous

INTRODUCTION

As we consider the role human-computer interaction might play in promoting mental health and well-being, we have the opportunity to reflect on the communities of practice with which we engage and consider the benefits of expanding that circle. For example, HCI research has benefitted from many successful collaborations with researchers in psychology to help understand how humans think and interact with their surroundings. Indeed, there is an enormous body of experimental psychology research that digs deep into exploring what makes a human tick. However, there is often an unfortunate disconnect between tightly-controlled studies conducted in the lab and the application of these findings in practice. In order to move beyond the confines of the lab, HCI researchers must learn complementary techniques for assessing and modulating human behavior that don't rely on between-subjects comparison.

At the same time, mental health resources are stretched to unprecedented levels. Many mental health practitioners are considering whether computational tools might help these limited resources go further and support equitable access to mental healthcare for all people. In addition to tools that enable access, research in promoting active engagement and designing unobtrusive interfaces could dramatically enhance these efforts and help reimagine what constitutes a "therapeutic intervention". This is particularly true in the field of social work, which is committed to fostering mental health through the eradication of social injustice and which has listed engaging with technology as one of its core challenges [4].

In this position paper, we argue for the breakthrough potential of partnerships between researchers in the fields of HCI and social work, as well as identify some key areas of concern in forging such collaboration. By facilitating dialogue between HCI researchers and practitioners in the field of human services, we are working to understand how our historically separate disciplines might better be able to support one another in making progress toward innovative mental healthcare that is both disruptive and accessible. In the following sections, we will describe in detail the potential benefits of forging ongoing collaboration from our perspective as members of the social work and HCI communities, and through these voices articulate some of the opportunities we've identified. Through this work, we hope to challenge our respective communities to actively engage with one another, and to collectively reimagine mental healthcare for the 21st century.

A SOCIAL WORK PERSPECTIVE

According to the Bureau of Labor Statistics, as of 2015 there are more than 640,000 social workers providing mental health services in the United States [5]. To put this number into perspective, that is more than the total of all other mental health care professionals combined[1]. Even so, while the social work community is currently utilizing all available human capital,

To appear in *ACM SIGCHI'16 #chi4good: Workshop on Computing and Mental Health*, 8 May 2016, San Jose, CA. Copyright © 2015 ACM ISBN/14/04...$15.00.

[1] In 2015, the following mental health professions were surveyed by the Bureau of Labor Statistics: mental health counselors and marriage and family therapists (166,300), psychologists (160,200), psychiatrists (25,080), school and career counselors (262,300), and social workers (640,000).

in many cases we are still not able to meet the needs of the clients and communities we serve.

The issue of scalability becomes profoundly evident when looking at the changing perspectives on the delivery of mental healthcare toward the end of the last century. Up through the 1970s, best practice in mental healthcare dictated that clients received services in controlled settings [7] (such as hospitals and residential programs) in order to ensure their safety. Toward the end of that decade, the emphasis shifted toward providing access to care in the client's home and community, facilitating the use of natural support systems and preservation of human dignity.

While the shift from institutional to home-based care has resulted in improved outcomes in both the short and long term, it has also increased the number of staff needed to serve any given client or community. Increased safety concerns for staff dictate that many agencies adopt a "buddy system" approach to providing home visits to high-risk clients. In addition, working in the community means that providers now spend substantially more time traveling between sessions. This is particularly true in rural communities, which are consequently chronically underserved for mental health resources. Couple this with reduced funding for new programs, rising poverty rates which are correlated with rising rates of protective concerns, and a tremendously high rate of burnout in providers (30% to 60% in some cases [2]), and the outlook for providing equitable access to mental health resources looks heartbreakingly bleak.

In light of this, advances in computational tools and human-computer interfaces have the potential to dramatically alter the landscape of mental health in the coming decade. This was underscored for the social work community with the American Academy of Social Work and Social Welfare's release of the 2015 Grand Challenges for social work, which called out "Practice Innovation through Technology in the Digital Age" as one of the 12 most compelling issues facing the profession:

> Information and Communication Technology (ICT) is transformational in its power to connect, create access to, and embolden new opportunities to rethink social work practice... As the world becomes increasingly reliant on technology, a grand challenge for social work is to harness technological advancements and leverage digital advances for social good [4].

As a field, social work has been slow to adopt new technologies. This is believed to be a result of ethical and privacy concerns, lack of ongoing training, and adherence to old fashioned predisposition toward face-to-face interactions [10]. This call to action encourages social workers to innovate and integrate technology into everyday social work practice. In so doing, we hope to improve the outcomes of interventions and increase access to services in populations who have been historically underserved.

That said, this same document also highlights the profound disconnect between social work and the computational sciences. The Grand Challenge suggests collaboration with "technologists, computer scientists, [and] software engineers" [4], but only in generalities; it provides little guidance as to precisely which aspects of computer science research would be likely to result in fruitful collaboration. To meet this challenge, social work doesn't just need specialized software; we need to understand the implications of introducing technology into the social worker-client relationship, and to challenge some long-held assumptions about the nature of therapeutic intervention. Because of this, we believe that collaboration with researchers in HCI is at the top of this list.

AN HCI PERSPECTIVE

Research in HCI often references work from experimental psychology to ground the design of novel systems and interaction paradigms. As we explore the potential for computational interventions to improve mental health, as well as strive to better understand the influence technology has on the mental health of human beings, we would anticipate the roots of this collaboration to grow even deeper. Indeed, many of the core values of psychology dovetail beautifully with those held by the HCI community. Excerpting from the American Psychological Association:

> Psychology is a diverse discipline, grounded in science, but with nearly boundless applications in everyday life. Some psychologists do basic research, developing theories and testing them through carefully honed research methods involving observation, experimentation and analysis. Other psychologists apply the discipline's scientific knowledge to help people, organizations and communities function better [1].

This is particularly poignant in light of this year's conference theme: *#chi4good*. Highlighted in the message from the CHI 2016 Day of Service Chairs:

> For decades, the CHI community has helped to transform the experiences people can have with new technologies. From understanding users' needs, to exploring the impact of new technologies, to building those empowering technologies, the CHI community takes action every day to bring about change [3].

As the chairs of this workshop articulate in their rationale for bringing together this community, it is our sincere hope we will be able to design technologies that can "...help mental health professionals provide better quality help, and are at the heart of new models of care [6]."

Unfortunately, there is often a significant disconnect between what we learn from the tightly-controlled laboratory studies we most often reference and the application of these findings in practice. This may be true in large part because rigorous psychological studies often isolate a specific functional, emotional, or behavioral factor in order to demonstrate a particular effect. While this results in findings that we believe to be reproducible and generalizable, our reliance on controlled studies runs the risk that we will presume the independence of various factors that may in reality be intimately related.

The myriad fields that study human behavior have observed this problem for ages: laboratory psychology, clinical psy-

chology, sociology, and social work (just to name a few) each take very different approaches to observing and explaining human behavioral phenomena. The development of radical, disruptive technologies that alter the way we think about and promote mental health requires us to engage all of these perspectives. In doing so, we must internalize the value of techniques that evaluate mental health in ways that are both substantive, and uncomfortably qualitative.

We believe that the benefits to the HCI community in partnering with other mental health practitioners run much deeper than learning new methods for assessing and validating the systems we build. For example, consider the perspective of the National Association of Social Workers (emphasis added):

> The primary mission of the social work profession is to enhance human well-being and help meet the basic human needs of all people, with particular attention to the needs and empowerment of people who are vulnerable, oppressed, and living in poverty... Fundamental to social work is attention to *the environmental forces that create, contribute to, and address problems in living* [9].

As HCI researchers, many of us consider ourselves problem-solvers, tool-builders, tinkerers. We are very good at identifying a specific gap, and designing an appropriately-shaped solution to fill it. In the same breath, we must strive be self-aware of our instinct to reduce the problems we face in designing for mental health to single-point solutions. As Goldkind and Wolf stated in their discussion of disruptive technologies for social work practice:

> Although technological innovation continuously alters the landscape of human possibility, it does not guarantee momentum toward the values of social justice. Social work is both uniquely positioned and ethically obligated to ensure that the drive of technological evolution is a project open to all, and that it does not replicate or amplify existing inequalities [8].

We argue that HCI is equally obliged to ensure that the arch of technological advancement is socially just. Understanding the role human-machine interaction might play within a larger sociocultural context is of critical importance as we work to situate computational tools as legitimate resources for promoting mental health. We can begin to do this by collaborating with disciplines that approach mental healthcare from a systems perspective, striving to end the oppression and injustice that so often form the insidious roots of trauma.

POTENTIAL PITFALLS

Barriers to successful collaboration between HCI and social workers are many. On the surface, we observe that collaborative work between these two fields is currently uncommon. Overcoming this inertia will require a great deal of effort on behalf of institutions on both sides to forge new working relationships, as well as the development of a shared language through which we can effectively communicate our ideas. Once these relationships are forged, we must still acknowledge that there is limited infrastructure to support these collaborations.

Supporting Collaboration: Money and Space

The issue of limited funding is not unique to either social work or computer science, but the procurement of grants and other supports becomes all the more challenging when the work crosses the identified boundaries of either field. Funding entities also operate at drastically different scales for institutional research than they do for community-based intervention, which can prove challenging in scoping interdisciplinary collaborative work. In addition to funding, we must also push for more opportunities to engage in critical discourse as an interdisciplinary community. Workshops like this one are an excellent start; we should continue to challenge ourselves to push for the creation of inclusive spaces on both sides of the divide.

Rewarding Collaboration: Publication

The problems we will have to address in order to achieve our collective goal of improved mental health will not be solved overnight; we will need to incentivize new researchers to incorporate this line of inquiry into their core research agendas and pursue it with passion. Unfortunately, social work has few venues dedicated to the discussion of advancement in the study of technology as used in mental healthcare. The discussions that do happen within the context of social work journals and conferences tend to focus on the use of specific conventional applications and software. Similarly, practical applications of existing techniques may be overlooked in computational circles in favor of contributions highlighting novel interfaces or interaction paradigms, even when the former presents a profound advancement in promoting the well-being of humans and society. If we are going to be successful in forging lasting partnerships across this divide, each community must be willing to carefully consider how it evaluates the merit of interdisciplinary work, and whether and how that work is counted toward tenure and promotion.

Challenging Notions of "Therapy" and "Mental Health"

In integrating technology into mental healthcare, we must also guard against the temptation to be overly rigid in what we are willing to define as "therapeutic". While the therapeutic applications of cognitive behavioral training software or simulated *in vivo* exposure through virtual reality environments are clear, the use of social media and video games has not yet earned such a designation, despite studies observing their potential for therapeutic benefit. In considering the application of interactive technologies to support mental health, we must open our definition of "therapeutic" to include any intervention or facilitated opportunity for a client's growth, empowerment, or improved wellbeing. At the same time, it is also critical that the systems we design privilege the client's self-determination. It should not be the goal of any intervention to adjust the client to meet an objectively desirable outcome, but rather to partner with clients to increase their capacity to meet their own goals. To do so, we must challenge ourselves to be critical of our socially-constructed definitions of "sane", "mentally healthy", and "normal."

CONCLUSION

In this position paper, we highlight the potential for breakthrough partnerships between HCI and social work. Leveraging what the HCI community has learned about promoting active engagement and designing unobtrusive interfaces, we can work to co-create tools that can make an impact on the availability and efficacy of community-based mental health resources. In tandem, this collaboration would provide opportunities for HCI researchers to learn complementary techniques for assessing and modulating human behavior, with an emphasis on individual well-being and the well-being of society. In addition to the potential benefits, we also identified some key areas of concern in forging such collaboration. In closing, we challenge our respective communities to actively engage with one another, to understand how we might better be able to support one another's work, and to collectively reimagine mental healthcare for the 21st century.

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