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Five ways of being "theoretical": Applications to provider–patient communication research

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ABSTRACT

Objective: Analyzes the term "theoretical" as it applies to the area of provider–patient communication research, in order to understand better at a conceptual level what the term may mean for authors and critics.
Methods: Based on literature on provider–patient communication.
Results: Offers, and discusses, five definitions of the term "theoretical" as it applies to empirical research and its exposition: (1) grounding, (2) referencing, (3) design and analysis, (4) interpretation, and (5) impact. Each of these definitions embodies a different standard for evaluating the theoretical aspects of research.
Conclusion: Although it is often said that research on provider–patient communication is not "theoretical" enough, the term is ambiguous and often applied vaguely. A multidimensional analysis reveals that there are several distinct ways in which empirical research can be strong or weak theoretically.
Practice implications: Researchers, educators, editors, and reviewers could use the "Five Ways" framework to appraise the theory-relevant strengths and weaknesses of empirical research and its exposition.

1. Introduction

Often, research on provider–patient communication is criticized for not being sufficiently "theoretical." Granting agency review panels, journal editors and reviewers, and members of the investigator community can often be heard to voice this lament, both on and off the record. Consider the following statements:

> Although considerable attention has been given to doctor-patient communication, relatively little research on this topic is grounded in theory. [1, p. 1]

> The literature concerning doctor-patient communication is abundant and comprehensive . . . [but] the main characteristics of the field are diversity and fragmentation. Part of the problem is the lack of a unifying theoretical framework to enable integration of models and to guide application of the research findings. [2, p. 225]

> An underestimated problem in research on doctor-patient communication is the influence of a-theoretical decisions on concrete research. [3, pp. 905–906]

Statements such as these clearly suggest that the literature on provider–patient communication may be descriptively adequate but deficient in deeper ways. But what exactly is the deficiency? And, when people make this allegation, what exactly do they mean? Are they talking about the same thing or are they responding to different types of deficiencies? Unfortunately, the vague and imprecise demand to be "more theoretical" is not helpful to researchers. The goal of this article is to discuss different possible meanings of the term "theoretical," and in so doing to give researchers in this area an enriched sense not only of a concrete standard against which they might be judged, but also an expanded set of definitions of what it means to be theoretical.

It is important to state three things that are *not* goals of the present article: (1) to discuss the definition of a theory in much detail, (2) to enumerate different criteria by which a given theory

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can be evaluated for its adequacy (e.g., heuristic value, validity, or parsimony), and (3) to catalogue or recommend particular theories that are relevant to provider–patient research. These goals are beyond the scope of the present endeavor and have been addressed elsewhere [4–8].

2. Methods

This is a reflective essay, based on conceptual analysis as well as familiarity with research and theory related to provider–patient communication.

3. Results

In our view, there are five distinct and valid ways to be theoretical. These are not mutually exclusive and indeed researchers could profitably consider all five when planning, analyzing, and writing about their research. Some ways to be theoretical may be more relevant than others to a given piece of research, and a given piece of research may be strong on some and weak on others. By articulating the "Five Ways" separately, we hope that it will be clearer to both authors and their critics where to look for strengths and weaknesses. The five ways to be theoretical pertain to grounding, referencing, study design and analysis, interpretation of findings, and impact (Table 1).

3.1. Grounding

For present purposes we will consider a theory to consist of a set of conceptual, and potentially operationalizable, constructs for which the author states the interrelations [5]. In other words, a theory is an attempt to explain or describe empirical phenomena at a conceptual level. Assuming this very general definition of theory, we would say that a piece of empirical research is *theoretically grounded* if it uses a theory as its starting point. An example would be to deduce from cognitive dissonance theory the prediction that choosing a particular health care provider, or choosing to remain with that provider, will produce the motivation to see that provider in a favorable light [9].

Much research that one might call "atheoretical" is actually grounded in theory but the author has failed to develop the arguments (hypotheses, predictions, rationales, etc.) that would make the theoretical grounding clear. Such research can be called *latently theoretical*: the theoretical aspects of the work could be brought to light if the author made the effort to do so. Actually, it would be rare for research to be *literally* atheoretical in terms of grounding, because that would imply that the variables included in the study were truly picked randomly. Researchers do not pick variables randomly; they have a hunch or an implicit feeling for why certain variables might be related or why it might be important to include them in a research protocol. A researcher should always make explicit the logic that underlies such hunches.

The theory on which a piece of research is grounded need not be taken "off the shelf" to be a valid basis for the research; in other words it need not be a formal, named, referenceable theory (as examples, social cognitive theory, social learning theory, cognitive dissonance theory, the theory of reasoned action, stages of change model, or the elaboration likelihood model). Though grounding one's research on a previously developed theory provides it with a respectable ancestry, in fact an investigator could validly ground his or her research on an original or previously unpublished and untested theory, or even just a novel point of view from which justifiable hypotheses can be developed. Good hypotheses need not be deduced from a formal theory, but can come from many sources, such as the author's own experience, common beliefs or observations, the desire to reconcile conflicting empirical results, or a surprising result [8]. Good theoretical grounding depends not on the researcher's ability to claim a respectable ancestry for his or her work, but rather on his or her ability to provide good *theorizing*: the provision of adequate background, logical justification for the research and its hypotheses, and convincing arguments for what the findings mean.

It is our impression that researchers who ground their research on their own theorizing can face an uphill battle with reviewers who are skeptical of research that is not directly derived from a recognized theory. Such a bias is unfortunate because it suppresses originality.

Table 1
Five ways of being theoretical.

1. Grounding
2. Referencing
3. Study design and analysis
4. Interpretation of study findings
a. Theory informing
b. Theory mapping
c. Theory generating
5. Impact

3.2. Referencing

Theory referencing occurs when an author mentions previous theory, but does not claim that the hypotheses being tested were directly derived from any particular theory. In theory referencing, an author cites and possibly describes relevant theories or conceptual frameworks when introducing the new research and/or when discussing the results.

Referencing has two distinct functions. The first is to provide the reader with substantive edification about the subject matter of the research. Referring to theoretical traditions provides context and thereby stimulates the thought process of the reader, facilitating new connections and insights. The reader might be reminded of, or learn about for the first time, areas of research or theory that are relevant to the present research. Referring to theories also helps the reader to know where to look in the published literature for additional insight or inspiration.

The second function of theory referencing is to serve the author's need for accreditation. As everyone who reviews a grant or manuscript, reads a published article, or listens to a scholarly talk knows, the task of evaluating quality is often difficult, and increasingly so as the work falls farther out of one's own areas of expertise. In the face of such ambiguity, peripheral cues to credibility take on great importance. These include the author's reputation, degrees, seniority, institutional affiliation, funding source, and who his or her co-authors are. Another such cue consists of indications of competence that are internal to the work, such as the use of sophisticated statistical techniques and the demonstration of familiarity with the field of study, which includes theory referencing. An author who appears up to date and well read looks smart and credible. Conversely, if a critic can point out some area of ignorance or some important theory that has not been mentioned, the author's credibility is undermined and his or her research is more easily dismissed.

At its best, theory referencing stimulates thinking and expands the knowledge base of the reader, but at its worst it is little more than window dressing. We believe that the "not theoretical enough" allegation when lodged by reviewers is sometimes a way of saying that the author has not established credibility by showing that he or she is sufficiently familiar with the relevant literature. Though it is wise for an author to be aware of these contingencies,

it is unfortunate if theory referencing is mistaken for more substantive ways of being theoretical.

3.3. Study design and analysis

Even without placing one's research in the context of any new or existing theory, research can be made more theoretical if the *design or mode of analysis* is chosen specifically to advance an enriched understanding of a phenomenon and thereby to help develop or improve theory. Theory development is especially well served if the research is capable of uncovering causal relationships between variables.

Randomized experiments (randomized controlled trials) are theoretical in this sense, by definition, because such studies are designed to demonstrate cause and effect. It is important to note, however, that a randomized experiment can still be theoretically lacking in other ways—for example if the researcher does not offer compelling reasons for choosing the independent variable, fails to justify the predictions, provides inadequate interpretations of the results, or does not discuss *mediating* processes—the proverbial "black box" that lies between a manipulated independent variable and a measured dependent variable. An investigator conducting a randomized experiment will not always be able to address this black box empirically (i.e., measure potential intermediate steps in the causal process), but he or she can always speculate on what is in it (see Section 3.4). Of course, when research is specifically designed to assess mediating processes by measuring variables that might explain an observed causal relationship, it gains greatly in theoretical value. To do this requires the investigator to invest thought at the design stage, in order to decide what potential mediators to measure ("Is the causal path $X \rightarrow A \rightarrow Y$ or is it $X \rightarrow B \rightarrow Y$?"). Thinking in advance about potential mediators could also lead an investigator to build in additional control groups in order to rule out alternative explanations for the obtained results.

Instead of (or in addition to) seeking out mediating processes, the researcher might wish to demonstrate circumstances or populations for which a given phenomenon is stronger or weaker, in other words to demonstrate *moderation* [10]. Moderator variables can be identified through subgroup analyses within a study, or across studies using meta-analysis [11]. Mediation and moderation are terms that are often confused. They pertain to *different* ways of gaining theoretical insight; mediation asks why and moderation asks when [10].

The assertion that certain design approaches are intrinsically theoretical (such as designing a study to establish causality, mediation, or moderation) has a corollary, which is that how one analyzes the data has theoretical implications as well. It is possible to make statistical analysis choices without adequately considering their theoretical impact. A practice that we find particularly problematic is the routine tendency to adjust for covariates (such as patient, provider, or system background characteristics) without careful consideration of what this means theoretically. Sometimes, moreover, covariate adjustments are made under the evident assumption that this yields a more "correct" picture of a relationship between the variables of interest. In fact, it yields a certain picture, but not one that is necessarily more correct or appropriate than the picture produced by an unadjusted analysis. This is because different analytic approaches address different questions, and each is valid only in terms of the question being posed.

There are several ways in which making covariate adjustments can be theoretically problematic. First, finding that a relationship between variable *X* and variable *Y* withstands adjustment for possible confounders (covariates) tells what does not account for the relationship, but not what does. Authors can be too quick to infer that *X* causes *Y* after performing such an adjustment when, in fact, the observed relationship is still correlational and the true cause may lie elsewhere.

Second, authors can misunderstand what is implied theoretically when covariates do account for an observed relationship. Here an example will help. Consider the finding that male and female physicians differ in the length of their office visits [12]. If, after adjusting for case mix and other variables, there is no longer such a difference, it would not be correct to conclude that there is "really" no difference between male and female physicians in visit length. A correct conclusion would be that insight has been gained into *why* there is such a difference. Thus, a researcher might think that covariate adjustment has produced a more accurate estimate of the relationship between gender and visit length, when in fact what has been produced is an analysis that has distorted (actually obscured) the "real" relationship that exists. Real life is, obviously, not covariate adjusted and therefore authors should not suppress zero-order correlations in favor of covariate adjusted ones without careful thought about what this implies interpretationally (i.e., theoretically). It follows that unadjusted results should usually be presented along with the adjusted ones.

Third, using multiple regression or other covariate adjustment procedures to produce a supposedly purer or more "correct" estimate of the relationship of interest can be distorting for another reason as well. The size of a regression coefficient will depend on which other variables are in the model. With different covariates, different results will come out.

The point is not to discourage use of multivariate analysis (far from it), but only to urge a careful conceptual analysis of the implications of whatever kind of statistical analysis is chosen. Controlling for covariates can have more theoretical impact than researchers sometimes appreciate. This point necessitates careful consideration especially in cases in which the primary author of a research article and the statistical analyst are different people, as is sometimes the case in the health sciences.

3.4. Interpretation of findings

Careful thought about what findings mean is also a way to be theoretical (a point also made in the preceding section). When findings help to settle a theoretical question or confirm/disconfirm the prediction from a theory, it can be called *theory informing*. It is also theory informing to compare one's findings to previous findings, a practice that is often overlooked in medical and public health journals that tend to prize brevity above comprehensiveness.

Discussing alternative interpretations of findings can be called *theory mapping*. Again, the norm of brevity, or perhaps a bias against admitting uncertainty, can prevent authors from fully considering a full array of possible explanations (mechanisms, etc.) to account for their findings.

Using findings to develop a coherent new idea about a phenomenon or process is *theory generating*. Theory generation can consist of new amendments to existing theory, new ideas and justifications for future research, and new generalizations.

Meta-analysis, a powerful tool for synthesizing findings, can contribute to theory by resolving or confirming predictions, making comparisons between different kinds of studies, mapping the terrain of existing research to identify questions that need more attention, and suggesting new understandings of a phenomenon. Compared to the traditional narrative literature review, meta-analysis is able to encompass many more studies and reach more objective and firm conclusions. Meta-analysis is particularly well suited for detecting moderator variables. However, it is

important to remember that demonstrations of moderation cannot generally be interpreted in causal terms because the analysis is a correlational one and the comparison being made may be confounded by many other variables [11,13].

Being theoretical through the manner in which research is interpreted is especially important in the long run because giving careful thought to findings (including unexpected ones) can advance scientific understanding in new directions. Unexpected or not, findings deserve more careful conceptual analysis than they sometimes receive.

3.5. Impact

Often a reader responds to a piece of research with the feeling that it is (or is not) "theoretically interesting." What does this mean? We believe such a reaction refers to the feeling of *impact*. Impact can take several forms. The impact can be directly on the reader, through intellectual or emotional stimulation. For example, the results might be surprising in nature or dramatic in magnitude; or the study might be particularly ambitious, addressed to an especially important question, designed in an especially original way, or written in such a way as to get the reader thinking (either pro or con). The feeling of impact can also be related to the anticipation of the research's importance in the real world or for the advancement of scholarly understanding. Therefore, research that feels exciting and important is likely to strike a reader as theoretically interesting, and research that is unambitious or simple is likely to strike a reader as not theoretical enough.

Though it is generally to an author's advantage to underscore the novelty or the unexpectedness of the results, reviewers and readers in general should not be distracted by this aspect of perceived impact when judging other aspects of the research as, for instance, the method used to test the research question or the thoughtfulness of the interpretations offered. Also, although perceived impact is important, one should remember that good research does not have to be glamorous. It is valuable, for example, to contribute solid testing of specific aspects of a less flashy theory or to develop the descriptive database that allows for a deeper understanding of a specific phenomenon. So, perceived impact of a piece of research should not be considered synonymous with the overall quality or worth of a study.

4. Discussion and conclusion

4.1. Discussion

In this section we analyze some possible reasons why research on provider–patient communication is sometimes "not theoretical enough."

4.1.1. Editorial policies

As alluded to earlier, health-related journals typically require manuscripts to be short and concise. Unfortunately, this can lead authors to condense or omit literature review, theoretical rationales, and interpretations. On the other hand, there is not always an intrinsic contradiction between conciseness and theoretical depth. Implementing a thoughtful design and analysis takes no extra pages, and even discussing theoretical rationales and interpretations takes less space than one might think. But if it takes more pages to do an adequate job of framing and discussing the research, so be it. Provider–patient communication is a very complex topic, and, as such, may inherently require more space to do justice to the material. Rather than blindly assuming that they "can't" devote the space to these concerns, authors should assert the need to do so. A thoughtful editor might just agree.

4.1.2. Basic versus applied research

It might be argued that because provider–patient communication research has a practical, applied purpose, it does not need to be as theoretically oriented as basic research needs to be. We disagree with this argument. The goal of practical application is not contradictory to theoretical depth. In fact, consideration of practical problems invites *much* theorizing, in all the ways we have identified—choosing the most appropriate theoretical basis from which to examine the problem, articulating hypotheses and their rationales, speculating on (or, better, trying to investigate) causal mediating processes, seeking to establish and understand the boundary conditions of a phenomenon, presenting alternative interpretations, and so forth.

4.1.3. Real-world constraints

According to an old joke, late at night a drunkard is searching for his dropped keys under the bright light of a street lamp. When a passerby asks where he dropped them, the drunkard replies, pointing into the darkness, "Over there." "Then why are you looking here?" asks the passerby. The drunkard replies, "Because the light is better here!" We are not suggesting that provider–patient communication researchers are as misguided as that. However, there is a small element of truth to the analogy. In this field, we often do not start, top-down, with a research question or theoretical proposition to test, but rather proceed in a more bottom-up, opportunistic manner, by responding to the realities of gaining access to research sites, participants, databases, and funding. We rely on luck, networking, windows of opportunity, and the unpredictable cooperation of many parties. Such circumstances explain, in our view, why most work on provider–patient communication has been done in primary care settings to the relative exclusion of medical specialties (the latter settings being much harder to penetrate). Often, convenience governs what we do, so that we design research to fit what will be possible under the circumstances, not according to what we really want to find out. And, because databases are expensive and difficult to build, we are often in the role of data miners—looking for interesting nuggets in a database that was not designed with those nuggets in mind.

It is not surprising that when we are forced to be opportunistic, theoretical depth might suffer. However, some of the ways of being theoretical that we have outlined can be fully satisfied even when research is done with heavy real-world constraints and even when the research is more inductive than deductive.

4.2. Conclusion

The goal of this article was to offer a conceptual framework that can be applied by authors, editors, and reviewers when evaluating the theoretical adequacy of empirical research on provider–patient communication. The "Five Ways" framework provides, to both producers and consumers of research, concrete goals that represent a useful step beyond the vague admonition to be "more theoretical."

Though we have not advocated any particular theories, we do believe that researchers in this field should make as much contact as possible with research and theory in other, related fields, thus keeping the "big picture" in mind. Provider–patient communication researchers could look more than they do to theories or models not only from elsewhere within the health field but also from other, and broader, areas such as social psychology, cognitive psychology, communication, sociology, and anthropology. If researchers do not know the general theories and the state of knowledge in these broader areas, they might re-invent the wheel or at any rate miss opportunities for connection, extension, and

application. Moreover, the broader field would profit from the provider–patient communication findings more directly if they were embedded in general theoretical models. This could result in more recognition of provider–patient communication research in other areas. This is not to say there should be an all-encompassing general theory that can accommodate everything in provider–patient communication research. Smaller theories that deal with circumscribed phenomena or conditions are fine; it is an empirical question whether several phenomena can be parsimoniously accounted for under a more general theoretical framework [14].

The goal of this article was to address the often-voiced, but vague, lament that research on provider–patient communication is "not theoretical enough." We did this by asking the question, what makes a work seem not theoretical enough? Our inquiry produced the "Five Ways" framework described here. Though taking seriously the "not theoretical enough" charge, our position is not, however, primarily a critical one. There is a great deal of published research on provider–patient communication that satisfies the criteria we have suggested to some degree, and often to a high degree. Indeed, the "Five Ways" framework permits credit to be given for a variety of good methodological and intellectual practices that are sometimes not credited enough. Nevertheless, we would like to see improvement in the impact of our research beyond our own community and suggest that adding theory in all the suggested ways might be a step in that direction.

4.3. Practice implications

Researchers, reviewers, and educators could profit from applying the "Five Ways" framework to improve theory-relevant aspects of design, analysis, and exposition in research on provider–patient communication.

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Conflict of interest

None.

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