CULTURA E ESTRESSE PSICOLÓGICO[1]

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RESUMO: A análise da influência de fatores culturais no estresse psicológico (além dos sociais e psicológicos) tem sido dificultada em função do desenvolvimento incompleto de teorias culturais que resultem em medidas fidedignas e válidas de fatores culturais que possam ser incorporados a modelos multivariados. Neste artigo apresenta-se tanto tal teoria quanto uma metodologia e elas são aplicadas ao estudo da distribuição na comunidade das aflições psicológicas em uma área urbana do Brasil. Nesta teoria e metodologia, cultura é conceituada como modelos culturais compartilhados que são realizados de maneira imperfeita nos comportamentos cotidianos. A ligação do modelo cultural com o comportamento individual é colocada como "consonância cultural". Mostra-se que a consonância cultural em dois domínios diferentes está associada ao estresse psicológico independentemente de covariáveis e de outras variáveis intervenientes. São discutidas também as implicações destes resultados para pesquisas futuras.

Palavras-chave: Estresse psicológico, Fatores culturais, Teoria, Metodologia

CULTURE AND PSYCHOLOGICAL DISTRESS

ABSTRACT: Examining the influence of cultural factors on psychological distress, relative to other (e.g. social and psychological) influences, has been difficult due to the incomplete development of a theory of culture that leads to the reliable and valid measurement of cultural factors in such a way that these can be incorporated into multivariate models. In this paper we present both such a theory and such a methodology, and apply it to the study of the community distribution of psychological distress in an urban area in Brazil. In this theory and method, culture is conceptualized as consisting of shared cultural models that are imperfectly realized in mundane behaviors. The link of cultural model and individual behavior is referred to as "cultural consonance". Here we show that cultural consonance in two different domains is associated with psychological stress, independently from covariates and possible confounding variables. Implications of the results for future research are also discussed.

Key-words: Psychological Distress, Cultural factors, Theory, Methodology

The aim of this paper is to present a model, elaborated both conceptually and methodologically, for studying the influence of culture on psychological distress. The importance of cultural factors as an influence on psychological stress is generally acknowledged (Rohner, 1984; Segall, Lonner & Berry, 1998). At the same time, the concept of culture often remains a residual theoretical category that, assumed to be important and employed in the interpretation of data, remains vaguely-defined and, if measured, is often conflated with other factors such as ethnicity or even social class. Furthermore, there are serious criticisms of conventional definitions of

culture, criticisms that have remained unanswered for some time (Pelto & Pelto, 1975; Rodseth, 1998) and that limit the utility of the concept.

In the following paper we present a theoretical orientation and measurement model that will facilitate the study of the relationship between culture and psychological stress, as well as other indicators of individual adaptation.

Background to the Study of Culture and Psychological Stress

The relationship between culture and psychological stress has been seriously investigated for over half a century. Interest in the relationship between culture and psychological stress began as a part of the general interest in psychiatric epidemiology in the 1930's. Dissatisfied with estimates of the prevalence of "psychiatric disorder" (globally defined) based on rates of treated disorder, a variety of researchers began to investigate the distribution of psychiatric symptoms, or indicators of psychological distress, in a variety of populations. These included the studies in major metropolitan areas of the United States such as Chicago (Faris & Dunham, 1939) and New York (Srole, Langner, Michael, et al., 1962), as well as studies conducted in rural areas (Jaco, 1960). These studies were broadly sociological or social epidemiological in orientation and focused on the distribution of symptoms of psychological distress in relation to variables such as social class and marital status.

Interest in "culture" as a variable in the distribution of psychological distress grew as research extended beyond the confines of the United States. Most important in this work are the studies by Alexander Leighton and his colleagues. Leighton, trained both in psychiatry and in anthropology and working with a large group of students and associates, extended the investigation of the distribution of psychiatric symptoms to 8communities such as Stirling County in rural Canada (Leighton, 1959), the Yoruba of Nigeria (Leighton, Lambo, Hughes, et al., 1963) and Inuit (or "Eskimo") communities in Alaska (Murphy, 1972). The influence of cultural factors on psychological distress was conceptualized in a very specific way in these studies. Leighton (1959),

working primarily from the Canadian study, formulated a "social disorganization" hypothesis. He argued that communities could be ordered along a continuum from the most integrated to the most disorganized or disintegrated. Indicators of the degree of disintegration included such things as poverty and family stability, but above all else a disorganized community was characterized by a "confusion of its cultural values" (Leighton & Leighton, 1967: 1532). Social change or modernization led to social disorganization, and this confusion of cultural values was related to psychological distress.

It is worth noting here the methodology of the Leighton studies. Social disorganization (a term that he used interchangeably with social disintegration) was a characteristic not of individuals, but of communities. Communities could be assigned a position on the continuum by an ethnographer working over time in the community. Then, epidemiologic survey methods could be used to compare and contrast rates of psychological distress in these communities. Also, while the aim of this research ultimately was to understand the distribution of psychiatric disorders, the actual measurement of outcomes focused on the distribution of symptoms of distress that could only be generally associated with clinical disorder.

Despite the many admirable advances present in the work of the Leightons, two problems limited this approach. First, the concept of culture in the work suffered from a lack of specificity. For them, culture was the total lifeway of a social group that made it distinct from some other social group. They tended to emphasize values as the aspect of a group that was most important in distinguishing it from others, but this received little theoretical elaboration. Second, from a methodological standpoint, separating the influence of, for example, what they termed "a confusion in cultural values" from the effects of poverty or the effects of family stability was impossible, because all were combined in ordering communities along the continuum of social integration.

John Cassel and his associates (Cassel, Patrick & Jenkins, 1960; Cassel & Tyroler, 1961; Cassel, 1974; 1976) attempted to be more explicit in their theoretical orientation and to employ what were then innovations in culture theory in anthropology, especially the early writings of Clifford Geertz (1973). Rather than

viewing culture, as did the Leightons, as the sum total of the way of life of a social group, this perspective on culture emphasized the importance of culture as a system of symbols that define what is meaningful (or not) for members of the society. Cassel was particularly interested in situations in which that symbolic system was changing, and how that influenced the health, including the psychosocial health, of individuals.

In this research program, emphasis was placed on studying communities that either were undergoing rapid and profound culture change, usually as a result of industrialization, or in which a group of migrants to, typically, a city were confronted with cultural systems with which they had little or no experience (Cassel, 1974). In either case, Cassel argued, individuals would confront a world in which their understanding of that world was compromised. Expectations for social interaction and for the life course would not be the same as the expectations in which they had been socialized. This could then result in profound psychological stress.

Cassel's research program emphasized finding situations of communities undergoing rapid change, or receiving migrants, and then comparing groups within the community (e.g. older and younger people in the case of rapid change, migrants and long-term residents in the case of migration) in their responses to symptom checklists (Cassel, 1976). Culture change or the confluence of two or more cultures (or acculturation) was then interpreted as being the source of the observed differences in psychological stress.

While the work of Cassel and his associates is clearly important in terms of theoretical developments in this area, it suffered from a lack of methodological specification. The kinds of differences that could exist, for example, between younger and older persons in a rapidly changing community could encompass much more than changing systems of cultural symbols. Similarly, migrants to a new setting often occupy the lowest socioeconomic levels upon arrival, in addition to any differences that may exist in terms of cultural expectations. Even with the adroit use of control variables, isolating the influence of cultural processes in this kind of research usually involves showing what else might not explain differences, and then appealing to culture as the

explanation. It might be more useful to have an actual measure of what the cultural influence is.

Almeida-Filho (1982; 1987; 1998) reviewed the literature on culture and psychological stress with an emphasis on South America. This research has been heavily influenced by the classic work of the Leightons and Cassel, tending to emphasize the idea of rapid culture change (also called modernization or acculturation) as stressful and leading to psychological distress. Almeida-Filho (1982), however, offered the alternative hypothesis alluded to above: namely, that migrants are more profoundly affected by the stresses of their typically low economic position in a new community. This is especially problematic in situations in which economic change in rural areas force people off the land, but then new opportunities for labor do not exist in the cities to which they migrate. Almeida-Filho examined this alternative hypothesis in extensive epidemiologic surveys conducted in Bahia, Brazil, and concluded that migration had little to do with psychological distress. He argues that economic stresses are a much stronger influence. At the same time, he concludes that the careful analysis of the meaning of employment and economic participation are indispensable, hence returning to the idea that culture is important.

Other work that used the ideas of the Leightons and Cassel as a foundation, but then moved in a different direction, includes Dressler's (1991) combined ethnographic and epidemiologic study of depression in an African American community in the rural Southern United States. In that study, the concept of culture was employed as a contextual variable. There are rather well-developed models of social and psychological stress (Cohen, Kessler e Gordon, 1995) that specify a number of variables influencing feelings or symptoms of distress, including stressful life events, chronic social role stressors, individual coping styles and social supports. Dressler argued that these factors, while fundamentally important, would be modified or conditioned within specific social and cultural systems. What would be a culturally meaningful stressful life event, for example, could change from one community to another; furthermore, he argued, cultural context could also alter the associations among variables, so that what is a powerful precursor of psychological stress in one

setting may not be in another. Using this perspective, he developed a model of the influences on depressive symptoms for a particular African American community.

In Dressler's (1991) research, the concept of culture looms large in a theoretical and interpretive sense, but remains unelaborated methodologically. Ethnographic data were used to shape measures and specify hypotheses, but the link of the concept of culture to the results remained largely an issue of interpretation.

This brief and cursory review of the literature linking culture and psychological stress leads to the following conclusion: the idea that culture is an important factor in this process remains consistent in the literature, despite challenges to its importance. At the same time, there are clearly a number of problems that need to be engaged and solved. First, the theoretical work on a concept of culture useful for this kind of research remains to be done. This work clearly must engage the critique of the concept of culture in anthropology (Brumann, 1999). Second, ways of specifying cultural influences in quantitative models of psychological distress must be developed.

A Critique of the Concept of Culture

The modern critique of the concept of culture in anthropology can only be outlined here; the interested reader is referred to Borofsky (1994) or Rodseth (1998) for a complete discussion. Briefly, the critique encompasses three problems. First, what is the locus of culture? Where does it reside? Clearly, culture must reside within individual human beings; it cannot be otherwise. At the same time, there is an "external" quality to culture. That is, within a society, it can feel as if the knowledge and understanding necessary to function in that society reside somewhere outside of the individual. One way of reconciling these contradictory aspects of the concept is to think of culture as "distributed knowledge" (Rodseth 1998). To be sure, individuals are the repository of knowledge, but that knowledge is variably distributed across individuals, so that culture cannot be reduced to what any one individual knows or understands. Culture is, instead, the aggregated knowledge distributed across individual minds, with

one important proviso. Individuals accumulate much knowledge that is idiosyncratic, and such knowledge may be of little use (or even problematic) for social interaction. What is necessary for the functioning of society is that knowledge be shared, perhaps not completely, but at least at some level. Therefore, culture can be thought of as the shared knowledge distributed within a society that makes it possible for individuals to function adequately as members of that society (D'Andrade, 1995). This shared knowledge can be thought of as cognitive "cultural models" for beliefs, values and behaviors. Within any society there are many cultural models, ranging from the most simple and mundane cultural domains like accepted eating practices, to the most abstract and esoteric domains such as belief in the supernatural. What was once thought of as "a" culture is better thought of as the collection of these distributed cultural models within a society.

This definition of culture enables researchers to avoid a second major problem with conventional ideas about culture, that of "cultural uniformism" (Pelto & Pelto, 1975). Cultural uniformism refers to the assumption, usually implicit in conventional concepts of culture, that everyone in a society shares the same models. This assumption makes it impossible to deal with situations in which beliefs or values may be contested or competing. A better perspective is one of "intracultural diversity," or the idea that within any society, even small-scales societies, there may be different cultural models for beliefs and behavior. A distributional theory of culture makes intracultural diversity an empirical issue. In some societies, certain kinds of cultural models may be more widely shared, while in other societies these same models may be less widely shared and more contested. The degree of sharing or diversity in cultural models becomes a matter for investigation.

A third problem that can be more adequately resolved using this approach is that of culture and individual behavior (Linton, 1938; Crossley, 2001). Conventional, uniformist views of culture construct individuals as social robots, mindlessly reproducing the behaviors in which they are programmed by their cultures. Clearly, there is much more flexibility, adaptability, strategy and agency in individual behavior than that. A distributional theory of culture, at least

in principle, enables culture and individual behavior to be analytically and empirically separated. Individuals may know what culturally prototypical expectations for belief and behavior are, and yet they may still choose (or be forced by circumstance) to act or think in other ways. A theory of cultural models provides the conceptual tools to separate knowledge and behavior, and to make the link of shared knowledge and individual behavior an empirical question. Under varying circumstances, behavior may be more or less "consonant" with shared cultural models (Dressler, 2001).

Again, we have been able to do no more than to outline three basic (there are many more) problems regarding the concept of culture. Solution to these problems, along with methodological advances, will help to more precisely define the role of culture in the generation of psychological stress.

Cultural Consensus and Cultural Consonance: Methodological Solutions

Researchers working within this theoretical orientation have made some significant methodological advances in recent years. Prominent among these is the cultural consensus model developed by Romney, Weller e Batchelder (1986). The cultural consensus model starts by asking the fundamental question of sharing, because if knowledge is not shared, it can hardly be considered cultural. The cultural consensus model enables an investigator, by asking a sample of respondents a set of questions, to determine if their similarities in response to those questions are sufficient to make reasonable the inference that they are all drawing on the same cultural model in generating those responses. It is, in short, a test of cultural consensus.

If there is sufficient consensus, then two additional steps are possible. As noted above, it is unlikely that all individuals share equally all knowledge. In linguistic terms, this is equivalent to saying that all individuals are not equally "competent" in that cultural model, competence in this sense merely referring to the degree to which an individual shares knowledge with the group. The cultural consensus model enables estimates of each individual's cultural competence to be calculated.

Finally, the cultural consensus model takes advantage of differential individual competence to calculate a "culturally best estimate" of the responses to the questions. Rather than merely averaging over responses, the cultural consensus model gives higher weight to the responses of the individuals who have higher cultural competence. These are the best estimate, based on the particular level of consensus among respondents, of the knowledge one must possess to behave acceptably in that social group[2].

The cultural consensus model can be used to test for sharing and to estimate the culturally prototypical knowledge for any given cultural domain. Where the cultural consensus model is less helpful is in estimating the link of culture and behavior. Dressler and his associates (Dressler e Bindon, 2000; Dressler & dos Santos, 2000; Dressler, 2001) have suggested a new concept and method for dealing with this issue. The concept is termed "cultural consonance," and refers to the degree to which individuals approximate *in their own behavior* the behaviors or beliefs in a cultural model. In one sense, the link of the culture and behavior is logical. As Durkheim (1938) observed over a century ago, no one is obliged to follow rules or expectations within a society, but in most instances not to do so results in a failure to achieve desired ends. Individuals are motivated to behave in a way consistent with cultural models simply because it is logical to do so. But, that does not mean that all individuals are equally able to behave in a way consistent with cultural models. There may be a variety of economic, social and even ideological constraints that disrupt the consistency of culture and behavior. Therefore, it is better to think of culture and behavior as being more or less consonant.

Dressler (1996) proposed a technique for measuring cultural consonance with a cultural model. He used the cultural consensus model to estimate the culturally best responses to a set of questions regarding valued behaviors using a small sample of carefully selected key respondents. Then, he presented these same questions to individuals in a survey sample, asking them to report on their own behaviors, and calculated the degree to which their responses corresponded to the cultural consensus responses. This measure can then be used as either an independent or dependent variable.

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[2] The volume edited by Munck e Sobo (1998) has a number of examples of the cultural consensus model.

Aim of the Current Study

We use the set of concepts and methods just described to examine the relationship between culture and psychological distress in a sample of adults from urban Brazil. It is hypothesized that low cultural consonance, or the state of living in a way that does not correspond well to the shared cultural models within a social group, will be associated with psychological distress.

Immediately this raises the question of cultural consonance in what dimensions or domains? We chose to focus in two domains for this study: lifestyles and social support. Research in social epidemiology shows consistently that individuals who are of higher socioeconomic status, and who have greater access to the help and support of others, enjoy better health (Anderson & Armstead, 1995; Berkman, 1995). Since Veblen (1918), lifestyle, referring to individuals' accumulation of material goods and their adoption of status-enhancing behaviors, has been considered the way that individuals display or perform their socioeconomic standing in social interaction. We chose this variable in order to examine how lifestyle is culturally constructed, to what degree individuals are culturally consonant with those constructions, and what effects that cultural consonance might have. Similarly, the ways in which people think about seeking help and support from others, referred to as social support, are likely to be culturally constructed. At the same time, in times of felt need, individuals may not be able to act on those cultural constructions. So, we chose to examine how cultural consonance with models of social support may affect psychological distress.

Before turning to research methods, a note on outcome variables may be in order. The aim of this study is clearly to build theory, by testing novel hypotheses using new methods. In part it is exploratory. Therefore, no strong assumptions about specific effects of cultural consonance on psychological distress have been made; rather, our interest is in exploring these effects on a variety of measures of generalized psychological distress. Therefore, we have chosen three different measures of psychological distress that assess different aspects of the process. This seems most appropriate given the aims of the study.

Research Methods

The study was carried out between 1991 and 1993 in Ribeirão Preto, Brazil (human subjects protocols had been approved by the Institutional Review Board for the Protection of Human Subjects of The University of Alabama). The research was conducted in two stages. The first stage consisted of data collected to test for shared cultural models of lifestyles and social support (to be referred henceforth as the "cultural modeling" stage). The second stage consisted of a survey of a representative sample in the community, to collect self-report data on lifestyles, social supports, and psychological stress (to be referred to henceforth as the "survey" stage). These two sets of data were then linked to operationalize cultural consonance.

Sampling

In order to effectively sample from a large urban area, a variant of cluster sampling was employed. The principal investigators first selected four neighborhoods that, in their estimation, represented the range of socioeconomic variation in the city. These neighborhoods were: a *favela*, a *conjunto habitacional*, a traditionally middle-class neighborhood, and a new upper middle-class neighborhood. Complete enumerations of occupied households within these neighborhoods were obtained and simple random samples of households were selected for the survey. In the case of the *favela*, the enumeration came from a community advocacy organization; in the remaining neighborhoods, maps were obtained from the municipality indicating occupied house sites. In the survey stage, 40 households were selected, and the head of household, spouse and one child older than 18 years resident in the household were invited to participate. The final sample was 304 persons, although in this analysis we limit the sample to heads of households and their spouses (n=250), reasoning that the variables of interest here will apply most saliently to adult members of the household. The response rate was 65%.

For the collection of data for cultural consensus modeling, key informants were identified within each neighborhood. This was done by identifying people who were considered to be "typical" or "representative" of the neighborhood by their

neighbors. Five people from each neighborhood were interviewed for the cultural modeling stage. Although an extended discussion of this is beyond the scope of this paper, methodological research has shown that the cultural consensus model has extremely high power with very small samples (Romney, Weller & Batchelder, 1986). Also, the cultural consensus model does not assume independence of sampling units, so convenience samples are suitable so long as there is an attempt to obtain a range of variation (Handwerker & Wozniak, 1997).

Cultural Modeling: Measurement and Results

Because the measurement of cultural consonance in the survey data is dependent on the results of cultural modeling, we will depart from the usual sequence of presentation in a scientific article and describe both the collection and the analysis of data in the cultural modeling stage. The twenty key informants from the four neighborhoods were interviewed about lifestyles and social support. Items for each cultural domain were taken from previous studies (Dressler, Santos & Viteri, 1997). In this stage, we were interested not in each individual's personal beliefs or behaviors, but rather what they thought was typical for the community. The lifestyle items consisted of material goods (for example, owning a home, a car, household furnishings) and related behaviors (travel, taking vacations, reading books and magazines, watching television). There were a total of 39 items. Informants were asked to rate, on a 3-point scale, the degree to which owning these things or adopting these behaviors were regarded in the community as signs of having been a "success in life."

For social support, informants were presented with a set of common problems, such as being ill, needing to borrow money or having problems at their job, along with a set of persons to whom they might turn for help with those problems, including family, friends and neighbors. They were then asked to rank the order in which people in their neighborhood might seek help or support from different persons in response to those problems. In this task there was a total of 20 items.

Each task was analyzed using cultural consensus analysis. Briefly, in order to determine the degree of sharing, this technique applies a principal

components analysis to a data matrix in which the columns of the matrix are respondents, and the rows of the matrix are responses to questions. If the pattern of correlations among respondents is accounted for by one principal component, or if the first principal component is large relative to the second (more than three times larger), then it is reasonable to infer that there is enough commonality in response to indicate a single frame of reference, or cultural model, among the respondents. The responses can then be combined, giving more weight to the most culturally competent respondents, to indicate the "culturally best" answer to each question (Romney, Weller & Batchelder, 1986; Munck & Sobo, 1998).

In the current data, for each task there was clear evidence of cultural consensus. For the lifestyle items, the first principal component was more than 9 times larger than the second, and for the social support items the first principal component was more than 3 times greater than the second. For the lifestyle items, those rated as most important were the common indicators of a comfortable middle-class lifestyle. Emphasis was placed on owning a home and having a basic set of appliances and furnishings, as well as on exposure to the mass media through reading books and magazines, and having the opportunity for some travel and vacations. But there was little emphasis on an elaborate lifestyle of conspicuous consumption. The lifestyle depicted in this model is one of domestic comfort. We have discussed these findings at length elsewhere (Dressler, Santos & Balieiro, 1996).

For social support, there was a clear hierarchy of resort in seeking help from people, starting with the family and then moving to friends, neighbors and other persons outside of the family. The one item for which this shared pattern of response was reversed was the item related to employment. For that item, friends were ranked as the most important source of support (these results are discussed more fully in Dressler, Balieiro & Santos, 1997).

Differences across the four neighborhoods were examined and were found to be small. Upper middle-class respondents tended to identify a few more (but not many more) of the lifestyle items as important, but their overall ratings were not different enough to indicate that a different cultural model was being employed. In summary, there appear to be

broadly shared models of lifestyle and social support across these communities.

Measuring Cultural Consonance

In the survey of 304 persons, we asked the same questions about lifestyle and social support, except that survey respondents were asked to report on their own behaviors. For lifestyle items, we simply obtained self-reports of the items they owned and the frequency with which they engaged in related behaviors. For social support, each respondent was asked to report what persons he or she would as for help if these problems were to occur.

In order to matched the two sets of data in two ways. First, for lifestyle, we selected the items that received ratings indicating that they were at least somewhat, or very, important in indicating having been a success in life. There were 22 of the 39 items that were rated in this way. We then simply tabulated the number of those 22 items that were reported owned (or, in the case of behaviors, adopted) by the survey respondents, and divided by the total. This resulted in a measure that varies between 0 and 1.0, and the closer to 1.0 a person scores, the closer he or she approximates the cultural model of lifestyle (Dressler, Santos e Balieiro, 1996).

For social support, each set of potential supporters had been rank-ordered in the cultural modeling. In the survey, if respondents reported that they would seek out the highest ranked supporters from the cultural model, then they were considered to be consonant on that question. If they did not report that they would seek out the highest ranked supporters, they were not considered to be consonant on that question. When consonance with all the questions was considered, survey respondents could be allocated to one of three groups: persons highly consonant with the model of social support; persons moderately consonant with the model; and, persons with low consonance with the model.

These two measures will be referred to as cultural consonance in lifestyle and cultural consonance in social support.

Measuring Psychological Stress and Covariates

Our aim in this study was not to assess psychological symptoms in such a way that a careful and clinically-relevant determination could be made; we were, rather, more interested in the common sorts of symptoms of psychological stress that people more commonly experience. Two standard measures of psychological stress were used. The first is Cohen's Perceived Stress Scale (PSS), a ten-item measure that has been widely used in North America and that has been used in translation in Spanish (Cohen, Karmack & Mermelstein, 1983). This is the first use of it in Portuguese of which we are aware. The PSS emphasizes the sense of control (or lack of control) felt by the individual, assuming that feeling a lack of control is a manifestation of psychological stress. It shows acceptable reliability in this sample (alpha = .79).

The second measure was the depression subscale of the Brief Symptom Inventory (BSI-D), which is itself a short version of the Hopkins Symptom Checklist (Ilfeld, 1977). The BSI-D consists of ten items that are common symptoms of depressed affect, including feelings of helplessness and hopelessness, sadness, and social isolation. The BSI-D shows acceptable internal consistency reliability in this sample (alpha = .80).

We included a third dependent variable that is not usually considered to be a measure of psychological stress per se, but is rather a measure of adaptive or maladaptive coping. This is locus of control, and we used specifically the Health Locus of Control (HLC) scale developed and adapted by Coreil e Marshall (1982). This scale consists of 14 items, all of which refer to an individual's responsibility in falling ill, versus becoming ill as a result of bad luck or other forces beyond the individual. Higher scores are indicative of seeing oneself as affected predominantly by forces within one's own control (or an internal locus of control). The scale shows acceptable reliability (alpha = .78). All three of the scales of psychological distress were translated from English to Portuguese, and then back-translated to insure comparability in meaning.

Covariates in the present analysis include age (in years), sex (coded as 1=male and 0=female), and household socioeconomic status. Specific covariates were also selected as alternative explanatory factors to the measures of cultural consonance. Family income (measured in number of minimum salaries)

and years of education were used as covariates in the analysis of the relationship between cultural consonance in lifestyle and psychological stress. An indicator of social integration, modeled on the measure employed by Berkman (1985), was created for use in the analysis of cultural consonance in social support. This was formed by summing the number of social clubs that the respondent reported belonging to, the number of family living in the community, and the number of persons in their neighborhood that they considered to be friends.

Standard measures of central tendency and dispersion were used as descriptive statistics. In order to test the relationship between cultural consonance in lifestyle, cultural consonance in social support and each of the measures of psychological stress, separate multiple regression analyses were conducted, with appropriate covariates added to the models. Because there were just three categories for cultural consonance in social support, a dummy variable

analysis was employed. In dummy variable analysis, categories of a nominal variable are converted to multiple dichotomous variables, excluding one reference category (in this case, the reference category was "high cultural consonance in social support"). Including the remaining (in this case) two dichotomies together in the analysis is the equivalent of carrying out an analysis of covariance, but with the added flexibility for dealing with differences in category sample sizes that multiple regression analysis offers (Blalock, 1972).

Results

Descriptive statistics for the sample as a whole, and for each neighborhood, are shown in Table 1. The four neighborhoods sampled differ on all of the variables except for one. There is no difference in the distribution of male or female respondents

Table 1: Descriptive statistics

Variables:	Site 1 (n=67)	Site 2 (n=65)	Site 3 (n=57)	Site 4 (n=61)	Total (n=250)
BSI-D*	22.0(±7.3)	21.0(±6.1)	20.3(±7.1)	17.4(±5.8)	20.2(±6.8)
PSS*	25.2(±6.9)	20.2(±6.3)	19.2(±6.5)	18.2(±5.6)	20.8(±6.9)
HLC*	4.7(±2.7)	7.8(±2.6)	7.4(±2.8)	10.1(±2.5)	7.5(±3.3)
Age*	36.8(±10.9)	36.7(±9.9)	48.1(±10.5)	42.8(±9.7)	40.8(±11.2)
Sex (% male)	41.8	41.5	38.6	41.0	40.8
Cultural consonance in lifestyle*	35.4(±12.4)	63.7(±8.3)	70.4(±10.9)	82.9(±9.0)	62.3(±20.4)
Cultural consonance in social support:**					
Low (%)	41.8	24.6	19.3	16.4	26.0
Moderate (%)	20.9	13.8	21.1	23.0	19.6
High (%)	37.3	61.5	59.6	60.7	54.4
Income*	2.6(±1.1)	3.5(±1.5)	3.5(±2.3)	6.6(±.88)	4.0(±2.1)
Education*	3.5(±1.8)	5.8(±3.6)	6.2(±4.4)	15.8(±3.0)	7.7(±5.7)
Social integration*	9.7(±3.5)	8.0(±3.4)	7.3(±2.8)	6.8(±2.5)	8.0(±3.3)

*$p < .01$, one-way analysis of variance
**$p < .01$, chi-square
[Note: Site 1: favela; Site2: conjunto; Site 3: middle-class neighborhood; Site 4: upper middle-class neighborhood]

The analysis of all three measures of psychological distress and cultural consonance in lifestyle, along with appropriate covariates is shown in Table 2. Controlling for other variables, higher cultural consonance in lifestyle is associated with

lower PSS and BSI-D scores, and higher HLC scores. It is worth noting that both family income and years of education are significantly associated with all three variables when cultural consonance is not in the analysis; when it is added, income and education cease

to be significant except in association with HLC. In the case of HLC, cultural consonance in lifestyle and education are independently associated with the dependent variable.

Table 2: Regression of psychological stress on cultural consonance in lifestyle and covariates (standardized regression coefficients)

Variables:	BSI-D	PSS	HLC
Age	.083	-.043	-.176*
Sex	-.303*	-.289*	-.050
Cultural consonance in lifestyle	-.277*	-.427*	.488*
Income	-.036	.011	-040
Education	-.048	.015	.303*
R	.455*	.512*	.665*
R^2	.207	.262	.443

P<.001

The analysis of all three measures of psychological distress and cultural consonance in social support, along with appropriate covariates, is shown in Table 3. Controlling for other variables, lower cultural consonance in social support is associated with higher scores on PSS and BSI-D, and lower scores on HLC. Again, these associations are independent of individuals reported involvement in social interaction, although it is curious that the social integration variable is associated with higher, rather than lower, levels of psychological distress.

Table 3: Regression of psychological stress on cultural consonance in lifestyle and covariates (standardized regression coefficients)

Variables:	BSI-D	PSS	HLC
Age	.011	-.142**	-.055
Sex	-.327*	-.275*	.024
.202*		.150**	-.162**
Moderate cultural consonance in social support	.027	.096	.075
Social integration	.049	.126**	-.137**
R	.357*	.394*	.243**
R^2	.127	.138	.059

*p<.001
**p<.05

As a final step in the analysis, the combined effects of the two cultural consonance variables on psychological distress were examined. For PSS and BSI-D, when entered simultaneously with age and sex as covariates, only cultural consonance in lifestyle had a significant association with the dependent variables; the effect of cultural consonance in social support dropped to nonsignificance, and there was no significant interaction (results not shown). For HLC, however, the interaction of the two variables was statistically significant, as shown in Fig. 1. The association of cultural consonance in lifestyle with HLC was stronger for persons higher in cultural consonance in social support (p<.05).
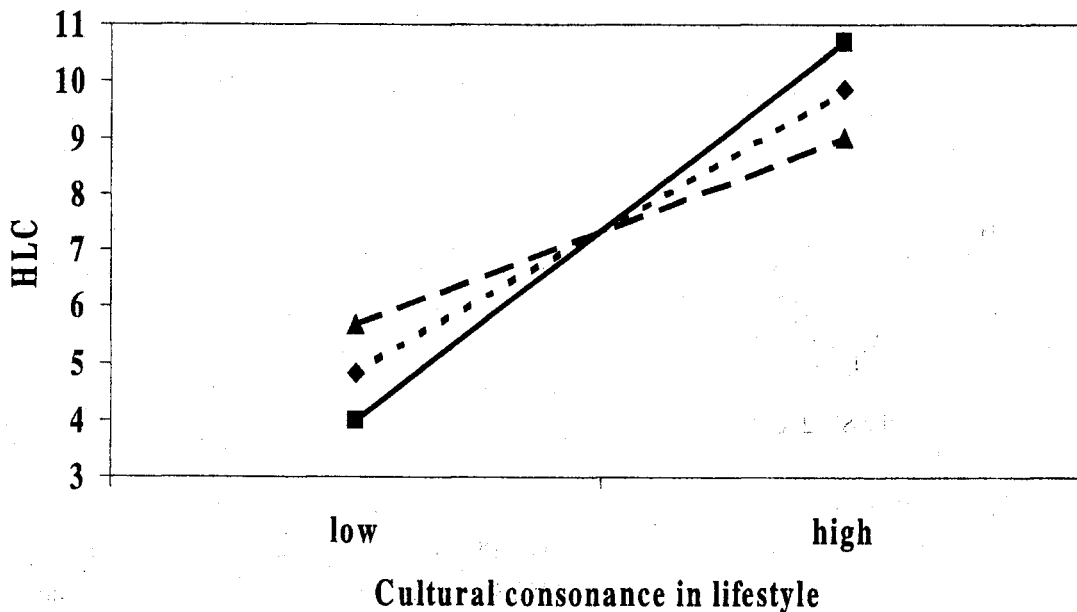

Figura 1: Interaction of cultural consonance in lifestyle and cultural consonance in social in relation to health locus of control

Discussion

As hypothesized, the more closely that individuals approximate, in their own behaviors, the shared cultural models that define culturally-preferred lifestyles and patterns of resort to social support, the lower their reported perceived stress and depressed affect, and the higher their sense of internal locus of control. These associations are independent of age and sex, and of potential confounding variables including family income, education and social integration. At least, these results suggest that further research in this area is warranted.

Further research can move in three directions. First, the cultural domains chosen for study here, lifestyle and social support, were chosen because of the importance of these factors in previous research (Dressler & Santos, 2001). These may not be, however, the only, or even the most important, cultural domains that define behaviors relevant to health. There is a long tradition, for example, of research on the family and mental health (McCubbin, Thompson, Thompson, et al., 1998). Similarly, "family culture" (Swartz, 1982) has been examined in a variety of studies, including how cultural models of the family are shared within and between families. The family would thus represent an interesting focus for study in Brazil and elsewhere. What are the essential elements of cultural models of the family? How is cultural consonance in the family associated with psychological stresses? How do measures of cultural consonance in various domains, such as the family, lifestyle and social support, combine in relationship to psychological stress? There are certainly other cultural domains that could be effectively examined in this regard.

Second, there exist methods to improve the measurement of cultural models. In our research reported here, we chose to incorporate measures from previous work, in order to put to the test our assumptions about shared cultural models in these domains. There are, however, an extensive set of interviewing methods that can be used to elicit cultural models. These include interviewing methods that generate data suitable for quantitative (Weller & Romney, 1988) and qualitative (Garro, 1996) analysis. Combining these methods to better define the cultural models for the domains studied will in turn improve

the measurement of cultural consonance in those domains.

Third, the relative importance of and correlations between cultural consonance in various domains and other competing explanatory factors need to be examined. For example, in the present study we included as alternative explanatory factors only those most obvious variables (typical measures of socioeconomic status in the case of cultural consonance in lifestyle, and a measure of social integration in the case of cultural consonance in social support). But other factors need to be ruled out. It is, for example, at least plausible to presume that, for example, a particular personality type may be more likely both the attain high cultural consonance, and to have lower levels of distress (e.g. the extroversion-introversion continuum could be relevant). More complex analyses including a wider range of variables is needed.

Finally, by what pathways does cultural consonance influence psychological distress? The individual's cognizance of a wide discrepancy between the shared understanding of a life and the actual reality of that life in his or her case can certainly lead to self-doubt, frustration, unhappiness and distress. At the same time, however, there may be a more subtle pathway, mediated in mundane social interaction. An individual's ability to live in accordance with widely-accepted cultural models is certainly a part of that individual's social identity, or what Goffman (1959) called "the presentation of self in everyday life". With a widely shared cultural model, individuals know the model, but may be ineffective in acting on it, resulting in a social self that is not regarded by others as "fitting in." In subtle but perceptible ways, in the most mundane of social interactions, the individual low in cultural consonance may receive cues from others that his or her behavior fails to live up to social and cultural expectations. They, in a sense, are informed of their marginality in their own society. This, too, may be a profoundly frustrating and upsetting experience.

In the final analysis, the results presented here offer a new avenue for the exploration of cultural influences on health and mental health, or indeed of the cultural correlates of a wide variety of processes. This model offers both a theoretical and methodological approach for bridging culture and action.

References

Almeida-Filho, N.D. (1982). The psychosocial costs of development. *Latin American Research Review, 17*: 91-118.

Almeida-Filho, N.D. (1987). *Migration and Mental Health in Bahia, Brazil.* Zaragoza, Caja de Ahorros de la Inmaculada de Aragon.

Almeida-Filho, N.D. (1998). Becoming modern after all these years. *Culture, Medicine and Psychiatry, 22*: 285-316.

Anderson, N.M & Armstead, C.A. (1995).Toward understanding the association of socioeconomic status and health. *Psychosomatic Medicine,* 57:213-225.

Berkman, L.F. (1985). Measures of social networks and social supports. In A.M. Osfeld & E.E. Eaker (Eds.), *Measuring Psychosocial Variables in Epidemiologic Studies of Cardiovascular Disease* (pp. 51-80). Bethesda: NIH Pubication.

Berkman, L.F. (1995). The role of social relations in health promotion. *Psychosomatic Medicine, 57*: 245-254.

Blalock, H.M. (1972). *Social Statistics.* New York: McGraw-Hill.

Borofsky, R. (1994). *Assessing Cultural Anthropology.* Chicago: Rand McNally.

Brumann, C. (1999). Writing for culture: why a successful concept should not be discarded. *Current Anthropology, 40*: s1-s27

Cassel, J.C. (1974). Psychiatric epidemiology. In G. Caplan (ed.). *American Handbook of Psychiatry* (pp. 401-410). New York: Basic Books.

Cassel, J.C. (1976). The contribution of the social environment to host resistance. *American Journal of Public Health, 104*: 107-123.

Cassel, J.C., Patrick, R. & Jenkins, C.D. (1960). Epidemiological analysis of the health implications of culture change. *Proceedings of the New York Academcy of Sciences, 84*: 938-949.

Cassel, J.C. & Tyroler, H.A. (1961). Epidemiological studies of culture change. *Archives of Environmental Health, 3*: 25-33.

Cohen, S., Kamarck, T. & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 24*: 385-396.

Cohen, S., Kessler, R.C. & Gordon, L.U. (1995). *Measuring Stress.* New York: Oxford University Press.

Coreil, J. & Marshall, P.M. (1982). Locus of illness control: a cross-cultural study. *Human Organization, 41*: 131-138.

Crossley, N. (2001). The phenomenological habitus and its construction. *Theory and Society, 30*: 81-120.

D'Andrade, R.G. (1995), *The Development of Cognitive Anthropology.* Cambridge: Cambridge University Press.

De Munck, V.C. & Sobo, E.J. (1998). *Using Methods in the Field.* Walnut Creek: AltaMira Press.

Dressler, W.W. (1991). *Stress and Adaptation in the Context of Culture: Depression in a Southern Black Community.* Albany: State University of New York Press.

Dressler, W.W. (1996). Using cultural consensus analysis to develop a measurement: A Brazilian example. *Cultural Anthropology Methods, 8*: 6-8.

Dressler, W.W. (2001). Medical anthropology: toward a third moment in social science? *Medical Anthropology Quarterly, 15*: 455-465.

Dressler, W.W., dos Santos, J.E., Gallagher, Jr., P.N. & Viteri, F.E. (1987). Arterial blood pressure and modernization in Brazil. *American Anthropologist, 89*: 389-409.

Dressler, W.W., dos Santos, J.E. & Balieiro, M.C. (1996). Studying diversity and sharing in culture: An example of lifestyle in Brazil. *Journal of Anthropological Research, 52*: 331-353.

Dressler, W.W., Balieiro, M.C. & dos Santos, J.E.

(1997). The cultural construction of social support in Brazil: Associations with health outcomes. *Culture, Medicine and Psychiatry,* *21*: 303-335

Dressler, W.W. & Bindon, J.R.. (2000). The health consequences of cultural consonance. *American Anthropologist, 102*: 244-260.

Dressler, W.W. & dos Santos, J.E. (2000). Social and cultural dimensions of hypertension in Brazil: A review. *Cadernos de Saúde Pública, 16*: 303-315.

Dressler, W.W. & dos Santos, J.E. (2001). Correlações sociais e culturais com a pressão arterial: os estudos de Dressler e Dos-Santos. *Revista Brasileira de Hipertensão, 8*: 225-229.

Durkheim, E. (1938). *The Rules of the Sociologic Method.* (S. Solvay & J. Mueller, Trans.) New York: Free Press.

Faris, R.E.L. & Dunham, H.W. (1939). *Mental Disorders in Urban Areas.* Chicago: University of Chicago Press.

Garro, L.C. (1996). Intracultural variation in causal accounts of diabetes. *Culture, Medicine and Psychiatry, 20:* 381-420.

Geertz, C. (1973). *The Interpretation of Cultures.* New York: Basic Books.

Goffman, E. (1959). *The Presentation of Self in Everyday Life.* New York: Doubleday.

Handwerker, W.P. & Wozniak, D.F. (1997). Sampling strategies for the collection of cultural data. *Current Anthropology, 38*: 869-875.

Ilfeld, F.W. (1977). Current social stressors and symptoms of depression. *American Journal of Psychiatry, 134*: 161-166.

Jaco, E.G. (1960). *The Social Epidemiology of Mental Disorders.* New York: Russell Sage Foundation.

Leighton, A.H. (1959). *My Name is Legion.* New York: Basic Books.

Leighton, A.H., Lambo, T.A., Hughes, C.C., Leighton, D.C., Murphy, J.M., & Macklin, D.B.

(1963). *Psychiatric Disorder Among the Yoruba.* Ithaca: Cornell University Press.

Leighton, A.H. & Leighton, D.C. (1967). Mental health and social factors. In A.M. Freedman & H.I. Kaplan (eds.), *Comprehensive Textbook of Psychiatry* (pp. 1520-1533). Baltimore: Williams & Wilkins.

Linton, R. (1938). Culture, society and the individual. *Journal of Abnormal Psychology , 33*: 425-436.

McCubbin, H.I., Thompson, E.A., Thompson, A.I. & Fromer, J.E. (1998). *Stress, Coping and Health in Families.* Thousand Oaks: Sage.

Murphy, J.M. (1972). A cross-cultural comparison of psychiatric disorder. In W.P. Lebra, (ed.) *Transcultural Research in Mental Health* (pp. 213-240) Honolulu: East-West Center.

Pelto, P.J. & Pelto, G.H. (1975). Intracultural diversity: some theoretical issues. *American Ethnologist, 2*: 1-18.

Rodseth, L. (1998). Distributive models of culture. *American Anthropologist, 100*: 55-69.

Rohner, R.P. (1984). Toward a conception of culture for cross-cultural research. *Journal of Cross-Cultural Psychology, 15*: 111-138.

Romney, A.K., Weller, S.C. & Batchelder, W.H. (1986). Culture as consensus: A theory of culture and informant accuracy. *American Anthropologist, 88*: 313-338.

Segall, M.H., Lonner, W.J. & Berry, J.W. (1998). Cross-cultural psychology as a scholarly discipline. *American Psychologist, 53*: 1101-1110.

Srole, L., Langner, T.S., Michael, S.T., Opler, M.K. & Rennie, T.A. (1962). *Mental Health in the Metropolis.* New York: McGraw-Hill.

Swartz, M.J. (1982). Culture sharing and culture theory. *American Anthropologist, 84*: 314-337.

Veblen, T. (1918). *Theory of the Leisure Class.* New York: B.W. Heubsch

Weller, S.C. & Romney, A.K. (1988). *Systematic*

Data Collection. Vol. 10, Series in Qualitative Methods. Beverly Hills: Sage.