

RESEARCH PROPOSAL: USING CLIENT SATISFACTION TO IMPROVE CASE
MANAGEMENT SERVICES FOR THE ELDERLY

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Abstract

Client satisfaction has long been an important part of program evaluation. Although the quality of a program can not be represented by client satisfaction alone, client satisfaction is often accepted as an important indicator of program or service quality. There have been, however, a number of limitations regarding client satisfaction studies, including 1) the use of measures that are not contextually specific, 2) the predominantly positive responses which are not very helpful for service providers to make sense of the data without comparing the results with other agencies or conducting the surveys longitudinally, 3) the multidimensional nature of client satisfaction, and 4) the problematic assumption of equal weight among all survey items. Using a client-centered approach to measure client satisfaction in a case management setting, this proposed research project aims to overcome these limitations and to collect client satisfaction data that can provide concrete feedback for the service providers to improve their case management services for the elderly.

Using Client Satisfaction to Improve Case Management Services for the Elderly

Problem Statement

Case management is an important practice model in gerontological social work. Case managers work with older clients in a variety of settings, and many programs within the aging service network include a case management component (Robinson, 2000). Although many models of case management services exist, as White (1986) suggested, there are common core functions of case management services, including case finding, assessment, service planning, coordination, follow-up and reassessment. In general, case managers link clients to services and advocate on client=s behalf when barriers to access are experienced (Robinson, 2000).

Under contracts with the Illinois Department on Aging and the Chicago Department on Aging, the Chicago Central West Case Management Unit is a program under the auspices of Jane Addams College of Social Work at the University of Illinois at Chicago. The Unit provides case management to persons 60 years of age or older and in need of in-home services, including intake screening, assessment, developing a plan of care, referrals or linkages with service providers, monitoring and reassessment. According to the Program Director, this state-funded program is currently serving about 4,000 clients (P. Bennett, personal communication, November 13, 2002).

As an effort to improve its services, the Chicago Central West Case Management Unit is planning on soliciting client=s feedback by conducting a client satisfaction survey (P. Bennett, personal communication, October 25, 2002). Client satisfaction has long been an important part of program evaluation (e.g., Eckert, 1994; Kane, Bartlett, & Potthoff, 1995; Rossi, Freeman, & Lipsey, 1999; Royse, Thyer, Padgett, & Logan, 2001). Although the quality of a program can not

be represented by client satisfaction alone, client satisfaction is often accepted as an important indicator of program or service quality (Ingram & Chung, 1997). There are, however, a number of limitations regarding client satisfaction studies. First, client satisfaction studies have been criticized for the problem that satisfaction measures may not be contextually specific (Schneider, 1991). That is, it is often not adequate to use a generic satisfaction instrument across different types of settings, because different settings usually have different service components (Chou, Boldy, & Lee, 2001). Second, in general, most respondents of client satisfaction surveys indicate satisfaction with services received (e.g., Royse et al., 2001; Ingram & Chung, 1997). Given the predominantly positive responses from client satisfaction studies, it is difficult for service providers to make sense of the data without comparing the results with other agencies or conducting the surveys longitudinally (Ingram & Chung, 1997). Third, researchers have long argued that client satisfaction is multidimensional (e.g., Attkisson & Greenfield, 1994; Ruggeri & Greenfield, 1995), and therefore, clients can report overall satisfaction with the services received though they may not be satisfied with some specific aspects of the services (Chou et al., 2001; Corrigan, 1990). Lastly, many studies measure satisfaction by summing or averaging satisfaction scores across survey items to represent a client's global satisfaction, assuming that all survey items carry equal weights (e.g., Kruzich, Clinton, & Kelber, 1992; Chou et al., 2001). This assumption is somewhat problematic because individual clients may perceive certain survey items to be more important, or carry more weight, than others (Chou et al., 2001).

Therefore, conducting a client satisfaction survey using popular instruments, such as Client Satisfaction Questionnaire (CSQ-8, Nguyen, Attkisson & Stegner, 1983) and Reid-Gundlach Social Service Satisfaction Scale (R-GSSSS, Reid & Gundlach, 1983) may not

necessarily provide helpful information for the Chicago Central West Case Management Unit to improve their services because these instruments are not contextually-specific. There are instruments like Home Care Satisfaction Measure: Case Management Service (HICSM-CM13, Geron et al., 2000) designed specifically for case management settings. The major limitation with these instruments, however, is that they produce only global satisfaction scores. Without collecting the data longitudinally or comparing the data with other agencies, service providers often have difficulty interpreting the results.

This proposed project seeks to overcome these limitations of client satisfaction studies with regard to elderly case management. By asking the clients to rate their satisfaction with all major service aspects of elderly case management services, including assessment of clients' needs, plan of care development, case manager's knowledge regarding available services, case manager's ability to get services for clients, and the availability of the case manager, this proposal will address the issues of contextual relevance and the multidimensional nature of client satisfaction. These service aspects reflect the major components of case management (White, 1986) and each aspect represents an important element of the services provided by the case management agency. Obtaining satisfaction ratings with each of the major service aspects, the proposed client satisfaction measure can pinpoint the exact sources of client's satisfaction and dissatisfaction to service providers without the need to compare data with other agencies or longitudinally. In addition, this project will address the possibility of unequal weights among the different service aspects by incorporating client's perceived importance of these service aspects into the measurement of client satisfaction. That is, the proposed measure takes into account the potential inter-personal differences in perceived importance of various service aspects without

making the assumption that all service aspects contribute equally to clients= global satisfaction. It is, therefore, a true client-centered satisfaction measure. In sum, this proposed project seeks to conduct a client satisfaction study in an elderly case management setting, using a measure that is specific to the setting, and takes into account clients= perceived importance of various service aspects.

In addition to collecting data that can provide concrete feedback for the Chicago Central West Case Management Unit to improve their services, this proposed project will contribute to the knowledge development of client satisfaction research by examining the potential of unequal importance of various service aspects. More specifically, it will address the following research questions:

1. Is it reasonable to assume that satisfactions with various service aspects all contribute equally to clients= global satisfaction?
2. Can clients= perceived importance of various service aspects be a weighting factor linking satisfaction scores from various service aspects to global satisfaction?

Theoretical Perspective

The research questions that this proposed project seeks to address are issues related to the measurement and conceptualization of client satisfaction. In another body of satisfaction literature, life satisfaction, the issue regarding the possibility of unequal weights among individual satisfaction items also exists and has been investigated extensively (e.g., Diener, Lucas, Oishi, & Suh, 2002; Hsieh, 2003; Oishi & Diener, 2001). In fact, there are a number of similarities between client satisfaction and life satisfaction regarding their measurement and conceptualization. First, client satisfaction, like life satisfaction, involves subjective evaluations

of objective conditions (e.g., Reid & Gundlach, 1983). Second, client satisfaction is a multidimensional construct (Attkisson & Greenfield, 1994; Ruggeri & Greenfield, 1995; Chou et al., 2001), and so is life satisfaction (e.g., Cummins, 1995, 1996; Diener, 1984). Third, client satisfaction, like life satisfaction, can be measured by either a single-item global satisfaction as well as a composite of satisfactions with various domains (e.g., Nguyen, Attkisson & Stegner, 1983). Given these similarities, the theoretical perspective that has been used to address the measurement and conceptualization issues in life satisfaction literature can serve as a foundation to study client satisfaction.

Reflective Approach vs. Formative Approach

The theoretical perspective underlying the proposed client satisfaction measure is an extension of the P.I.'s earlier work on life satisfaction (Hsieh, 2003). Besides using single-item global satisfaction measures, researchers who construct multi-item measurements of life satisfaction generally follow either a top-down or a bottom-up approach (Diener, 1984). The top-down approach assumes that global life satisfaction is a predispositional trait or personality which influences one's evaluation of satisfaction in specific domains; while, the bottom-up approach maintains that global life satisfaction can be regarded as the composite of satisfaction in various domains (Diener, 1984). Similar to the case of client satisfaction, the multidimensional nature of life satisfaction limits the utility of single-item global life satisfaction measures, since an individual can be satisfied with his/her overall life but dissatisfied with certain aspects of life (Cummins, 1996). In fact, the use of top-down and bottom-up approaches to measuring life satisfaction coincides with the use of reflective indicators (or effect variables) vs. formative indicators (or causal variables) in measurements in general (e.g., Bollen & Lennox,

1991; Cohen, Cohen, Teresi, Marchi, & Velez, 1990; Chin & Newsted, 1999; Fayers & Hand, 1997; Fayers & Machin, 2000). In a formative indicators model, indicators are viewed as determining or causing the latent construct, which is similar to the bottom-up approach. In a reflective indicators model, indicators are viewed as determined by the latent construct, which is similar to a top-down approach (Bollen & Lennox, 1991; Cohen et al., 1991; Chin & Newsted, 1999).

Since the landmark study by Campbell, Converse and Rogers (1976), it has become common to measure global life satisfaction by simply summing across satisfactions in various discrete life domains, such as health, finance and friendships (e.g., Beatty & Tuch, 1997; Mookherjee, 1992). This so-called bottom-up approach (Diener, 1984) to measuring global life satisfaction can be applied to the measurement of global client satisfaction. That is, Campbell et al.'s (1976) conceptual model of life satisfaction can be adapted for client satisfaction (see Figure 1). Based on the model shown in Figure 1, the proposed client satisfaction measure follows a formative indicators model more closely than a reflective indicators model. That is, global client satisfaction is determined by satisfactions with various service aspects.

Weighting by Perceived Importance of Various Service Aspects

As many have observed (e.g., Cummins, 1995, 1996; Diener et al., 2002; Diener et al., 2000; Hsieh, 2003; Oishi & Diener, 2001), the correlation between the global life satisfaction outcomes produced by the different approaches (top-down vs. bottom-up) is usually not very high. A factor that might contribute to the low correlation is the possibility that individual satisfaction items do not carry equal weights (Hsieh, 2003). That is, simply summing

satisfaction scores across various items, without considering the potential unequal weights of these items, may not be a good indication of an individual's global satisfaction. In fact, researchers (e.g., Campbell et al., 1976; Inglehart, 1978) have long noted the possibility of unequally weighted individual life domains in the overall picture of life satisfaction. Despite different terms used to discuss this (e.g., domain importance by Campbell et al. in 1976; value priority by Inglehart in 1978; and psychological centrality by Ryff and Essex in 1992), researchers generally agree that global life satisfaction is a weighted composite, not a simple sum, of domain satisfactions and the relative importance of each discrete life domain should act as a weighting mechanism.

Based on the findings in life satisfaction literature, it is very likely that simply summing client satisfaction scores across various service aspects may not necessarily be a good indication of a client's global satisfaction. The proposed client satisfaction measure, therefore, will incorporate clients' perceived importance of service aspects as a weighting mechanism, linking satisfactions with various service aspects to global satisfaction. It should be noted that in life satisfaction literature, although it is generally agreed that weighting through the importance (of life domains) is conceptually appealing, there is no consensus on how to weight. A common way of weighting is the use of multiplicative scores: multiplying satisfaction and importance ratings (e.g., Ferrans & Powers, 1985). As Trauer and Mackinnon (2001) recently pointed out, however, the use of multiplicative scores is problematic. The major issue regarding multiplicative scores is the difficulty in interpreting the meaning of the score, given that a score can be obtained by the combination of either a high satisfaction rating with a low importance rating or a low satisfaction rating with a high importance rating (Trauer & Mackinnon, 2001).

To overcome the conceptual ambiguity produced by multiplicative scores, the measure proposed for this study will use the following general formula to produce global client satisfaction scores (see Hsieh, 2003):

$$3(S_iHI_i)/3I_i$$

where S_i is the satisfaction score in service aspect i and I_i is the importance score of service aspect i .

Unlike multiplicative scores which may be difficult to interpret, the score obtained by this weighting scheme clearly indicates an individual's weighted (using importance of various service aspects) satisfactions. A hypothetical example can be used to illustrate the case. An instrument obtains satisfaction scores and importance scores for two service aspects. Person A has a low satisfaction score of one (1) and a high importance score of five (5) for one service aspect and has a low satisfaction score of two (2) and high importance score of five (5) for the other aspect. It will be impossible to distinguish person A from person B who has a high satisfaction score of five (5) for both service aspects and a low importance score of one (1) for one service aspect and a low importance score of two (2) for the other aspect if a multiplicative score approach is used. However, there will be a clear difference in the scores for person A and

for person B, using the formula proposed above.

Another issue regarding incorporating perceived importance of individual service aspects is the way importance should be measured. A common approach of measuring domain importance in life satisfaction literature is to ask respondents to rate the importance for each individual domain (e.g., Campbell et al., 1976; Ferrans & Powers, 1985). This approach is limited because it can not provide direct comparisons across domains. For example, if both domains receive the same importance rating, can we conclude that they have equal importance? Building upon the P.I.'s earlier work (Hsieh, 2003), this proposed measure will use importance ranking by asking the respondents to place these major service aspects into a hierarchy, based on their perceived importance of these service aspects. Using ranking is advantageous for two reasons. First, ranking not only shows the importance of each service aspect but also provides direct comparisons of importance across service aspects. Second, findings in life satisfaction literature suggest that the weighted composite (using ranking) of various satisfaction items is a better indicator of global life satisfaction than the simple sum of satisfaction items (Hsieh, 2003).

Measurement Issues

Based on the conceptual model shown in Figure 1, this proposed project defines and conceptualizes client satisfaction as a client's sense of service quality that stems from satisfaction or dissatisfaction with the service aspects that are important to him/her. Since this client satisfaction measure is new, its measurement property needs to be explored.

Validity. By calculating a correlation between the scores of this client satisfaction measure and the scores of CSQ-8 (Nguyen et al., 1983) and HCSM-CM13 (Geron et al., 2000), concurrent validity of this proposed measure will be assessed.

Reliability. Given the formative indicators model this proposed client satisfaction measure is based on, applying conventional guidelines for measurement construction may not be adequate. As Bollen and Lennox (1991) suggested, the concept of reliability based on internal consistency is only appropriate for a reflective indicators model. In other words, for a formative indicators model, using internal consistency as an indication of reliability is problematic (Bollen & Lennox, 1991). Therefore, test-retest method will be used to assess reliability here.

Level of measurement. Another measurement issue has to do with the level of measurement obtained in this new measure. Since this proposed measure is constructed using rating scales, it is unlikely that ratio level measurement data can be obtained. As pointed out by Trauer and Mackinnon (2001), multiplying two scores (satisfaction and importance) that do not have ratio level measurement properties is problematic. It is difficult to justify why the assigned values of a five-point scale should take one to five and not two to six or some other range of values. In fact, the issue of measurement properties is further confounded by the lack of conceptual or theoretical development regarding how importance should be incorporated into client satisfaction measures. It seems reasonable to assume that more important service aspects should weigh more. However, without guidance from any conceptual framework, it is not clear if satisfaction in a service aspect that is not important at all should carry zero weight in one's global satisfaction, nor is it clear how much more weight should be given for each one point increase in a five-point (or seven-point) importance rating scale. However, as a beginning step to deal with the issue of measurement properties, sensitivity analysis can be employed to check the dependence of the results on the score choices made in weighting schemes (e.g., Agresti & Finlay, 1997). Following the P.I.'s earlier work on life satisfaction (Hsieh, 2003), a few sensible

score choices will be employed to see if there is any pattern emerging from the results (see *Analysis Plan* section for details).

Methods

Setting, Sample and Power Calculation

The Chicago Central West Case Management Unit provides case management services to adults 60 years of age and older living in Chicago's west side neighborhoods and is currently serving about 4,000 clients (P. Bennett, personal communication, November 13, 2002). This proposed study will conduct a client satisfaction study among a random sample of 100 clients of the Unit. According to the formula provided by Krejcie and Morgan (1970), a sample size of 100 will have a margin of error less than 10 (9.68) percent at the confidence level of 95 percent for a population of 4,000 with a conservative estimate of 50 percent as the population proportion. These 100 clients will be randomly selected from the active client list of the Unit's client database. Face-to-face interviews will be conducted by a trained graduate research assistant at the homes of the participants. Half of these 100 participants will again be randomly selected for a second interview seven days after their first interviews for the purpose of examining test-retest reliability of the proposed measure. Participants will receive \$10 for each interview.

Measures

A structured survey questionnaire will be used for the interviews. Socio-demographic information of the respondents, including income, education, age, working status, marital status, health status, and living arrangement, will be extracted from the Unit's client database, with respondents' consent. In order to assess the validity of the proposed instrument, the survey questionnaire also includes CSQ-8 (Nguyen et al., 1983) and HCSM-CM13 (Geron et al., 2000).

The proposed instrument has six satisfaction items, five importance items and one ranking item (see Appendix A for a draft of these questions). The first five satisfaction items correspond to the five major service aspects provided by the Chicago Central West Case Management Unit and they came from the literature (Geron et al., 2000; White, 1986) as well as discussions with the Program Director of the Unit. It should be noted that before finalizing these questions, two discussion groups will be held with supervisors and case managers of the Unit and five pilot interviews will be conducted to solicit feedback and make necessary revisions. The last satisfaction item asks for global satisfaction. This global satisfaction item will be used as a single-item global client satisfaction measure. Participants will be asked to rate their satisfaction with each of these items as: completely satisfied, somewhat satisfied, slightly satisfied, neither satisfied nor dissatisfied, slightly dissatisfied, somewhat dissatisfied, or completely dissatisfied (see Appendix A).

Perceived importance of various service aspects will be measured in two ways: 1) by rating the importance of each service aspect separately, and 2) by ranking. Using the same approach that has been common in life satisfaction literature (e.g., Campbell et al., 1976) to measure domain importance, participants will be asked to rate the importance of each of the five service aspects as: extremely important, very important, somewhat important, not too important, or not at all important (see Appendix A).

Participants will then be asked to compare and rank among the service aspects with same importance ratings to obtain a rank ordering of these service aspects. This will produce a hierarchy of service aspects from one (most important) to five (least important) for each respondent. It is possible for service aspects of equal importance to be so ranked.

Analysis Plan

Descriptive statistics will be used to summarize the socio-demographic composition of the respondents, satisfactions with individual service aspects, importance ranking of the service aspects, and global client satisfaction. To assess the measurement properties of the proposed client satisfaction measure, the following analyses will be conducted:

1. The proposed instrument will be validated by performing a correlation analysis between total scores of the measure and those of CSQ-8 (Nguyen et al., 1983), and HCSM-CM13 (Geron et al., 2000), and the single-item global satisfaction measure. An individual's total score on the proposed instrument will be constructed, using the formula discussed in the *Theoretical Perspective* section. It should be noted that only the first five satisfaction items will be used in constructing the total scores, since the global satisfaction item will be used as a single-item global client satisfaction measure.

2. The reliability of the proposed instrument will be assessed, using a correlation analysis on test-retest results.

3. To address research question 1, mean importance rating as well as mean importance ranking of each service aspect will be presented. These descriptive statistics can indicate whether or not all the service aspects receive similar rating as well as ranking in terms of importance. In addition, exploded logit model (or rank-order logit model) will be used to further analyze the data. The exploded logit model is a generalization of the conditional logit model and can handle data generated by ranking a set of items (Allison, 1999; Allison & Christakis, 1994).

The analysis will be conducted using the PLOGIT procedure of the SAS program and will begin with the construction of a working data set in which a separate record will be created for each of the five service aspects for each of the respondents. Each record will include: 1) a

unique identification number for the respondent; 2) the rank for the specific service aspect; 3) a set of four dummy variables corresponding to four of the five service aspects (one as the reference category); and 4) other variables describing the respondents (i.e., age, and income). The null hypothesis that there is no difference in the perceived importance among various service aspects will be tested by estimating an exploded logit model with only the set of four service aspect dummy variables as the independent variables. Additional analyses will also be conducted to examine if the importance ranking pattern of various service aspects varies by demographic factors (such as gender, age and education). These analyses will be done by estimating exploded logit models with the set of four service aspect dummy variables and the interaction terms of demographic-by-service variables as the independent variables (Allison, 1999; Allison & Christakis, 1994).

4. To address research question 2, correlations between the global-satisfaction item score, CSQ-8 (Nguyen et al., 1983), HCSCM-CM13 (Geron et al., 2000) and simple sum of service aspect satisfaction scores as well as the weighted sum of service aspect satisfaction scores will be compared. Using the same approach of the P.I.=s earlier work (Hsieh, 2003), different weighting mechanisms will be constructed. Given that importance of the service aspects will be measured on an ordinal scale (for both rating and ranking), the equal distance between the values of ratings (from one to five) as well as rankings (from one to five) may not necessarily hold. Therefore, in addition to assuming that the weight of importance increases or decreases as a linear function, weighting mechanisms will be constructed on the assumption that the weight follows non-linear functions, taking into account the nature of an ordinal scale (see Hsieh, 2003 for a more detailed discussion).

Limitations

Two limitations that this proposed project has should be addressed here. First, although the probability sampling strategy used in the proposed project makes the results generalizable (with a moderate margin of error) to the clients of the Central West Case Management Unit, these results may not be generalizable to other case management programs. Therefore, the generalizability of this proposed project is somewhat limited. Second, it is likely that some clients may not be able to clearly distinguish case management services from other services provided by means of case manager=s referrals (such as home-delivered meals). Although the proposed client satisfaction measure makes an effort to ask the respondents about their satisfaction with various aspects of case management services only, results of this preliminary and exploratory project should be interpreted with caution.

Potential Significance in Improving the Well-being of the Elderly

This project seeks to collect client satisfaction data that can provide concrete information to assist the Central West Case Management Unit in their delivery of services. Using an approach adapted from life satisfaction literature to measure client satisfaction, this project can help the Unit pinpoint the exact sources of clients= satisfaction and dissatisfaction. As service providers, the Unit can continue to maintain the service aspects with high client satisfaction and make improvements on the sources of dissatisfaction. In addition, given the limited resources the Unit has, this study can help them set priorities in dealing with the service aspects needing improvement based on clients= perceived importance of them. This study, therefore, has the potential to benefit the thousands of elderly clients the Unit has by assisting the Unit to improve their service delivery. Furthermore, the proposed client-centered approach of measuring client

satisfaction can be easily adapted by other case management service agencies and for other gerontological social work practice settings and has the potential to benefit the well-being of even more elderly persons.

Project Timetable

Table 1 (see attached) shows the proposed timetable for completing the project.

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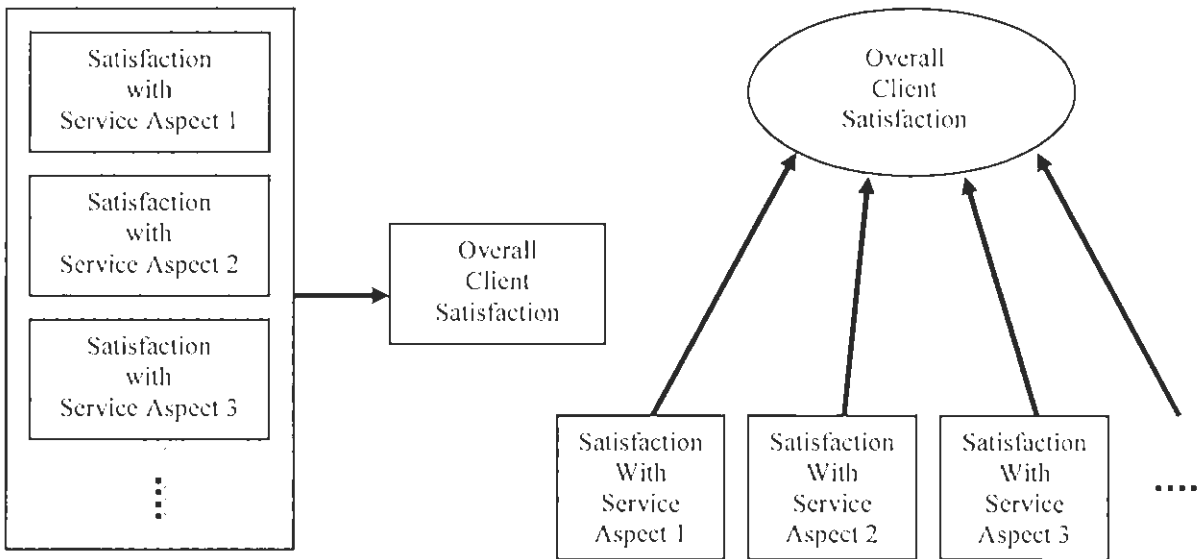
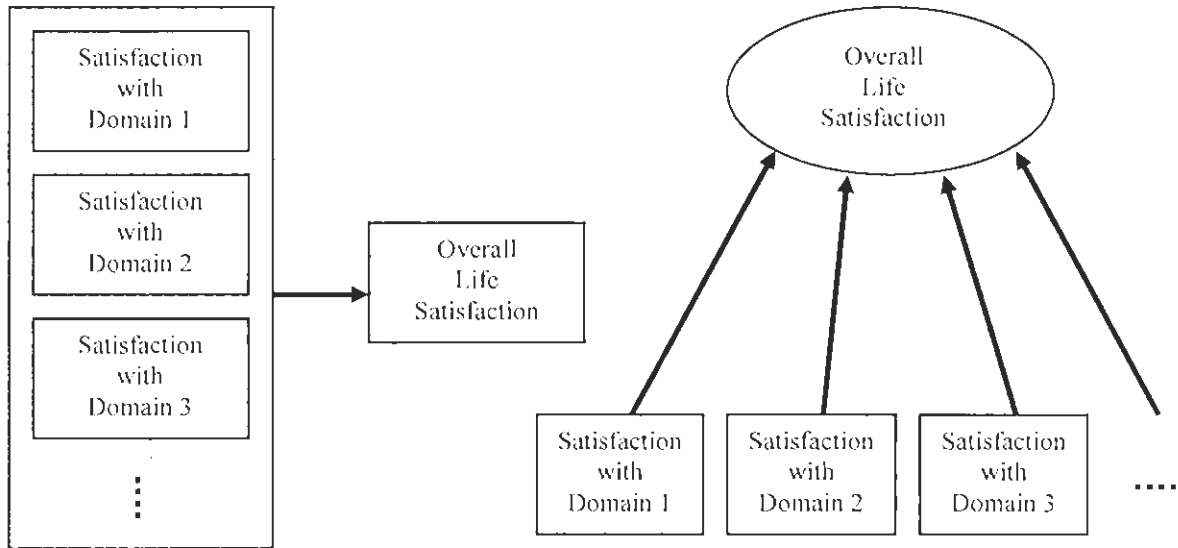
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Table 1

Project Timetable

YEAR ONE			
Tasks and Activities	Sep/03	Oct/03 - May/04	Jun/04 - Aug/04
1. Hire and train research assistant	X		
2. Finalize survey questionnaire	X		
3. Conduct interviews		X	X
4. Enter and clean data		X	X
5. Conduct preliminary analyses			X
YEAR TWO			
Tasks and Activities	Sep/04 - Apr/05	May/05 - Jun/05	Jul/05 - Aug/05
1. Conduct interviews	X		
2. Enter and clean data	X		
3. Analyze data	X	X	
4. Prepare findings for publication		X	
5. Submit findings for publication			X



Appendix A

The following questions ask how satisfied are you with different services provided by the Central West Case Management. Please use a number from 1 to 7 to indicate your satisfaction where 1 means Acompletely satisfied≅ and 7 means Acompletely dissatisfied.≅ If you are neither completely satisfied nor completely dissatisfied, you would put yourself somewhere from 2 to 6; for example, 4 means neutral, or just as satisfied as dissatisfied.

1. How satisfied are you with your case manager=s assessment of your needs? _____
2. How satisfied are you with the plan of care your case manager developed? _____
3. How satisfied are you with your case manager=s knowledge regarding the services that are available? _____
4. How satisfied are you with your case manager=s ability to get services for you? _____
5. How satisfied are you with the availability of your case manager? _____
6. All together, how satisfied are you with the services you receive from the Central West Case Management? _____

Some people may feel some areas of the case management services are more important than others. What areas of case management services do you consider extremely important or not at all important to you? Please use a number to indicate the importance of the services from 1 through 5, where 1 means Aextremely important≅ and 5 means ANot at all important.≅

1. Case manager=s assessment of your needs _____
2. Your plan of care _____
3. Case manager=s knowledge regarding available services _____
4. Case manager=s ability to get services for you _____
5. Availability of your case manager _____

Based on importance, please rank the following 5 areas of case management services from 1 (the most important) to 5 (the least important). Use the same number for any areas you believe are equally important.

- _____ Case manager=s assessment of your needs
- _____ Your plan of care
- _____ Case manager=s knowledge regarding available services
- _____ Case manager=s ability to get services for you
- _____ Availability of your case manager