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STRUCTURED DECISION MAKING IN

ADULT PROTECTIVE SERVICES

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A Project

Presented to the

Faculty of

California State University,

San Bernardino

_____

In Partial Fulfillment

of the Requirements for the Degree

Master of Social Work

_____

by

Joseph Kenneth LoCoco

Christy Anne Herff

June 2007

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Approved by:

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Social Work

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ABSTRACT

The focus of this research project was to evaluate individual stakeholder perceptions of the implementation of Structured Decision Making (SDM) as a tool in risk assessment of elder abuse/neglect case referrals in Riverside County Adult Protective Services (APS). Riverside County is the first county in the United States to implement SDM in their APS division and is considered cutting edge in its efforts to better identify cases of elder abuse and neglect. The researchers interviewed ten social workers from Riverside County APS, from line workers up to the Deputy Director. Constructivist theory was used to develop a joint construct which indicated that the primary benefit of SDM was consistency. SDM provided consistency in affirming the County's educational requirements of professional social workers. It created consistent response times for social workers receiving abuse allegations as well as clarifying exactly who a client of APS is and is not. Lastly, consistency resulted in safety and protection of the client, social worker and the agency.

ACKNOWLEDGMENTS

DEDICATION

This project is dedicated to those involved in improving the lives of dependent and older adults served by Adult Protective Services. This project is an acknowledgement that through hard work and dedication, we can make a difference in the lives of those who are vulnerable, oppressed and living in poverty.

TABLE OF CONTENTS

LIST OF FIGURES

CHAPTER ONE

ASSESSMENT

Introduction

The focus of this research project was to evaluate

Riverside County's recent implementation of SDM in APS.

SDM is a tool designed to assist social workers in making

consistent decisions regarding appropriate interventions

in cases of elder abuse and neglect. This research

project asked key stakeholders within Riverside County

APS about their perceptions of the implementation and

effectiveness of SDM. The research project adopted a

constructivist paradigm since it focused on subjective

experiences of SDM. Multiple interviews of various APS

and previous Child Protective Services (CPS) personnel

were conducted. These stakeholders made up the

hermeneutic dialectic: the group of individuals who

participated in the research project. The perspectives of

the researchers were that positive or negative views of

SDM may have been dependent upon one's position within

the County's organizational structure. The literature in

the study supported utilizing SDM as a tool to guide

1

appropriate decision-making in county organizations dealing with abuse and neglect.

Research Focus and/or Question

The focus of this research project was Riverside County's recent implementation of SDM in APS. This research project evaluated social worker perceptions of whether SDM was an effective tool for making consistent decisions in the identification of abuse and neglect. The researchers gathered qualitative data through interviews in order to evaluate whether or not implementing SDM has been more effective in assessing risk for elder abuse and neglect.

Paradigm and Rationale for Chosen Paradigm

According to Morris (2006), a constructivist's paradigm:

> Recognizes that we all understand the world from our own points of view...the only way we can understand a human phenomenon is to completely and thoroughly understand the perceptions, or constructs, of those people who are engaged in that human phenomenon...Constructivists propose that

researchers gathering new knowledge about the human

experience must gather subjective data. (p. 194)

This paradigm was chosen because it was the most

effective methodology, since it allows the researchers to

identify the beliefs and viewpoints (perspectives) of

those working with the SDM tool. The constructivist

perspective brought together the multiple interpretations

of SDM by the workers utilizing the model and management

that had seen the need for SDM since its inception.

Literature Review

The literature review is one construction within the

hermeneutic circle of constructions. The literature

review suggested a need for SDM to be fully implemented

in order to enhance critical thinking decisions,

especially those used in risk and safety assessments. The

literature review discusses how we learn decision making

through critical thinking skills and how these skills,

contingent upon education and relevant experience,

currently apply to risk assessment in many areas of human

services.

Decisions are made every day of our lives. The

ability to make decisions can be traced back to

adolescent development. Psychologist Jean Piaget theorized that as a consequence of post-formal operational development, the ability to engage in planning and decision-making is learned (Berk, 1998). According to Berk (1998), "adolescents, who think more analytically, handle cognitive tasks more effectively than they did at younger ages...they are far better at self-regulation-planning what to do first and what to do next, monitoring the progress toward a goal and redirecting unsuccessful efforts" (p. 373).

Halpern (1998), and Jones and Brown (1991) found that the areas of both education and nursing characterize critical thinking as a higher order of cognitive thinking process. It follows then that the ability to move through a critical thinking or decision-making process is a skill that becomes quite vital later in educational, business and professional settings. According to Bergeron (1999), "clinical decision-making is important in every field of human services work" (p. 88) thereby making these skills critical to the assessment of elder abuse and neglect.

Since decision-making is a process, it can also be formalized. One major area of human service work that relies heavily on critical thinking and decision-making

4

skills is nursing. Consider for a moment the role of nurses whose setting would include risk assessment in healthcare, where the nurse is frequently faced with split-second decisions in life or death situations. In this light it is reasonable to conclude that superior critical thinking skills are essential. Girot (2000), states that critical thinking is the cornerstone of good clinical or theoretical decision-making and a "...complex cognitive process requiring higher order thinking and application to decision-making in practice" (p. 289). Similarly, good critical thinking is an essential skill in the field of elder abuse case identification and management. Since decision-making is a process, it can be formalized into a risk assessment tool such as the SDM model.

The risk assessment that APS has recent begun to utilize initially began in the field of child abuse. CPS currently uses SDM to determine the severity of abuse and type of services needed for all child abuse reports. Munro (1999) conducted a study in Britain on informal decision-making. It revealed that although social workers may have had good intentions in making informed decisions, in reality, constraints due to time and

caseloads, as well as the natural resistance to change, resulted in child abuse cases being misreported. It was concluded that more formal structured decision-making, not based upon an individual's education or reasoning skills, was necessary.

A research study utilizing SDM in CPS began in 1992 and evaluated the caseloads of social workers who had and had not yet implemented SDM. The findings of the report supported the need for SDM, noting that "For every outcome measure, families in the SDM counties had better results than families in the comparison counties" (Juvenile Justice Bulletin, 2001, p. 6).

Similarly, in an article written by Johnson and Wagner (2005), Michigan's foster care services reports on a study of the effectiveness of utilizing SDM within CPS. They found that when utilizing SDM, "workers' assessments of clients would improve, resulting in better identification of the service interventions needed" (p. 378). Since then, SDM models have been implemented in counties across the nation as well as worldwide.

Riverside County has recognized the need for SDM for consistent risk and safety assessments in elder abuse and neglect referrals. They have decided to be the first

county in California, as well as nationwide, to implement SDM as the tool to address this need.

Limited studies by Bergeron (1999); Jogerst, Daly, and Ingram, (2001); and Daly, Jogerst, Haigh, and Leeney, Dawson, (2005) have identified factors that may affect the ability of the average Adult Protective Services worker to provide a good decisional assessment leading to the subsequent delivery of appropriate social services. Similarly, their studies of elder abuse reporting and assessment identified the educational levels of APS workers as one of the key factors in the rates of effective reporting and assessment. Another key factor identified as increasing effective reporting and assessment was the use of a standardized investigation tool.

Mixon (1995) goes on to state that other factors such as lack of general public knowledge about elder abuse and complex ethical requirements for casework would count as yet another set of skills needed to properly handle APS cases. Overall, as limited research seems to suggest, it was determined that the aforementioned aspects were the most salient factors that could be

7

addressed by reporting agencies through the use of a decision making tool such as SDM.

Riverside County Adult Protective Services has taken action to address the need for SDM by implementing the SDM tool at the screening level. Riverside County is also in the process of implementing tools to be utilized at the responding social worker level for safety and risk assessments. As a result, the introduction of SDM has been proposed, designed and implemented into practice. It is anticipated that this cutting edge tool will assist the Social Service Worker (SSW) in identifying the salient factors leading to a more comprehensive case management and service delivery system.

Theoretical Orientation

The theoretical orientation of this study on the implementation of SDM is a macro-focused theory of organizational adaptation. Schmid (2002) suggests that organizations, in order to survive, must constantly evaluate the internal and external environments in order to achieve a sense of harmony between them. Adult Protective Services has identified a need within their agency to protect the needs of the workers and the

clients as well as the liability of the agency.

Adaptation is a learning process that enables the

organization to learn about its environment. This process

is performed so that workers can adapt for the survival

of the organization as well as their ability to serve

their clients. Organizational Adaptation Theory poses

that a social work organization must constantly be

monitoring not only outcome measures, but the process by

which they are creating outcome measures.

Through evaluation of their internal and external

environments, Riverside County Adult Protective Services

identified needs surrounding their intake / screening

process and further down the line, with social workers'

safety and risk assessments. Therefore, in response to

this, the county has chosen to utilize the SDM tool as an

appropriate strategy in order to strengthen its

organization and ensure its survival.

Potential Contribution of Study to Micro
and/or Macro Social Work Practice

This study has the potential to add to the knowledge

of social work practice at both micro and macro levels of

human organization. Studying this means that the field of

social work in APS will have a better understanding of

9

the need for accurate risk assessment of elder abuse and neglect. Furthermore, the necessity for other counties to implement such structured measures to assist their workers to accurately identify abuse may become apparent. The research study also has the potential to add to micro social work practice by revealing that tools which SDM may lead to more accurate assessments of abuse and neglect.

Summary

The focus of the research project, the evaluation of the recent implementation of SDM in Riverside County, was explained, as well as the necessity of utilizing a constructivist approach. The literature review was discussed as one construct which supports the use of SDM in order to enhance social workers' critical thinking skills when assessing elder abuse and neglect. The potential contribution to society of SDM may be that it will be found to be an effective tool to be used throughout all adult protective service agencies.

CHAPTER TWO

ENGAGEMENT

Introduction

The researchers established rapport with the County

of Riverside APS in order to complete this research study

of SDM. The original participants were selected by the

researchers, and additional participants were identified

by the original participants in their interviews. The

researchers employed strategies in order to engage with

the participants as well as to address issues of

self-preparation, diversity, ethics and political issues.

These were crucial elements in creating an accurate and

complete construct for each participant.

Research Site and Study Participants

The project was conducted at the Riverside County

Department of Social Services – Adult Services

Division/Adult Protective Services (APS)/In-Home Support

Services (IHSS). The key stakeholders with whom the study

was carried out were:

APS Social Workers

APS Intake Center Workers

APS Eastern County Regional Manager

APS Western County Regional Manager

APS Policy Analyst

APS Deputy Director

CSUSB MSW Student Researchers

Prior to the research project, the research site had already been engaged through the personal contacts and networking of one of the researchers. In September of 2005, the researcher first approached and engaged the Western Regional Manager about the possibility of a research study, while working as an Intern under her supervision within APS. In November of 2005, at the annual Mental Health and Aging conference, both researchers facilitated conversations with her surrounding the proposed research project to further network and gain support of the County. The researchers submitted a project proposal to the County of Riverside Adult Protective Services in February of 2006 and were granted a letter of approval to proceed with the project. The researchers were officially granted with an open study site in July of 2006, after they submitted additional required documentation to the County for approval.

The initial participants were identified through networking with the Western Regional Manager about the workers who had experience with SDM. The researchers, via email, engaged each participant and requested their participation in the researchers' project. Interview dates and times were set up accordingly. Engagement with the participants during the interviews included: active listening skills, attending skills and various question formats such as open-ended, opinion and feeling questions to elicit all participants' constructions of their experiences with SDM. The researchers tailored each interview specifically to the participants, keeping in mind each individual's stage of experience and not the researchers' goal. During the interview process, the researchers reflected back to the participants their constructs in order to stay consistent and accurate with their viewpoints. At the end of the interview, the participants were asked to identify other social workers who had opinions other than their own for the researchers to obtain a comprehensive constructivist perspective of SDM within Riverside County APS.

Self Preparation

The most important aspect of self-preparation was being able to recognize the impact that the researchers had on the participants. In other studies, researchers stayed detached from data collection. In this study, the researchers directly impacted the participants through the use of interviews as opposed to using an informal questionnaire to obtain data. The researchers needed to be aware of their impact on the participants as well as other issues such as diversity, political pressures and ethical dilemmas. Specifically, the researchers tuned into issues of diversity, ethics, politics and each participant's boundaries and limitations when planning, engaging and interacting with participants during the interview process (Morris, 2006).

In addition to this, the researchers had to be aware of the strong emotions that each of the participants may have brought to the interview. The study addressed a very intense issue that affected all social workers within APS and the researchers had to be prepared for the deep personal connection that each social worker may have felt regarding SDM.

Diversity Issues

The diversity issues that needed consideration and
attention focused on the Social Service Workers within
the APS system. Special attention to potential resistance
tactics either consciously or unconsciously was a salient
component to the success of the research dialogue.
Regarding age, for example, some older workers did not
embrace this "new way" of doing things and resented a
change to what they may have perceived as the correct way
of assessing elder risk of abuse. Additionally, many
workers adopted the attitude of too much "extra work"
being imposed on their already intensely strained and
complex risk assessment system.

Other diversity issues addressed were the
characteristics of the researchers, such as age, gender
and culture, compared to the characteristics of the
participants. Background demographics such as age,
education and social work experience were included in the
interview questions in order to acknowledge differences
and respect each individual participant. The researchers
also had to be aware of the power differences of being a
researcher versus a participant and emphasized to the
participants the fact that in this research project, the

researchers were not above the participants but were partnering with them. Also, the researchers had to be aware of the fact that the researchers were pursuing a Master's level degree, which put them in an elite category predominately above what the average line worker would have been expected to possess and more in line with management status.

Lastly, there are certain ethnic and gender differences that were not known until the interviews were conducted. The researchers had to be aware of and sensitive to these issues as both researchers were limited in that they were both of European descent; however, there were positive insights of diversity in that within the team, there was a diversity of gender, age range and sexual orientation.

Ethical Issues

Ethical issues expected to be encountered in the engagement of the study centered on client confidentiality and anonymity. Prior to any data gathering, dialogue with the participants informed them of the difficulty of maintaining confidentiality and that although names were withheld from the constructs, the

viewpoint may have made the individual known. Informed

consent (see attached Appendix B) was obtained from the

participants at the outset of the interview to ensure

their understanding of the limitations of confidentiality

within the research project. The researchers also

understood that they may have had to check back with the

participants throughout the research process to assure

that they continued to feel comfortable (Morris, 2006).

Political Issues

Most of the political issues surrounding the

constructivist project had been discussed before the

research actually began. The researchers discussed with

each of the participants the idea of shared power; that

no matter what the individual's place in the agency, each

participant in the study had an equal construct,

including the researcher (Morris, 2006).

Other political issues that may have potentially

served to skew the research study included the county

organizational management's keen interest in wanting to

show positive outcomes from the implementation and use of

the SDM model. By the same token, they also had a strong

desire to minimize any negative light shed on the overall

success of the project. In order to address these issues, the researchers submitted to the County the purposed interview questions for them to review and approve for use in the project.

Summary

Plans for engagement with the research sites, including the selection of the initial research participants, was discussed along with the preparation required of the researchers. Diversity, ethics and political issues involved in the study were discussed with particular interest on the limits of confidentiality within the study. These issues covered the researchers plan for implementation of the research project.

CHAPTER THREE

IMPLEMENTATION

Introduction

The researchers selected social work participants from the County of Riverside APS in order to create a comprehensive diversity of opinions about SDM. Each participant is presented along with their position within the county and their experience with SDM. Phases of data collection are described followed by the process by which the data was obtained and recorded.

Selection of Participants

The process of data collection ultimately resulted in the formation of a joint construction, but it began with the selection of participants. The sampling strategy adopted for this study was a purposive sampling method described by Patton (1990) in Morris (2006) as Snowball or Chain Sampling. This strategy "is a way of understanding and utilizing the networks between key people in relation to the study focus" (p. 93). This method allowed the researchers to identify other people who experienced SDM but may have had alternative viewpoints.

Participants selected were from various Riverside

County APS District Offices and included positions from

the Deputy Director down to intake screeners. The

researchers attempted to get a diverse selection of

individuals who had contact with SDM. Figure 1 is a

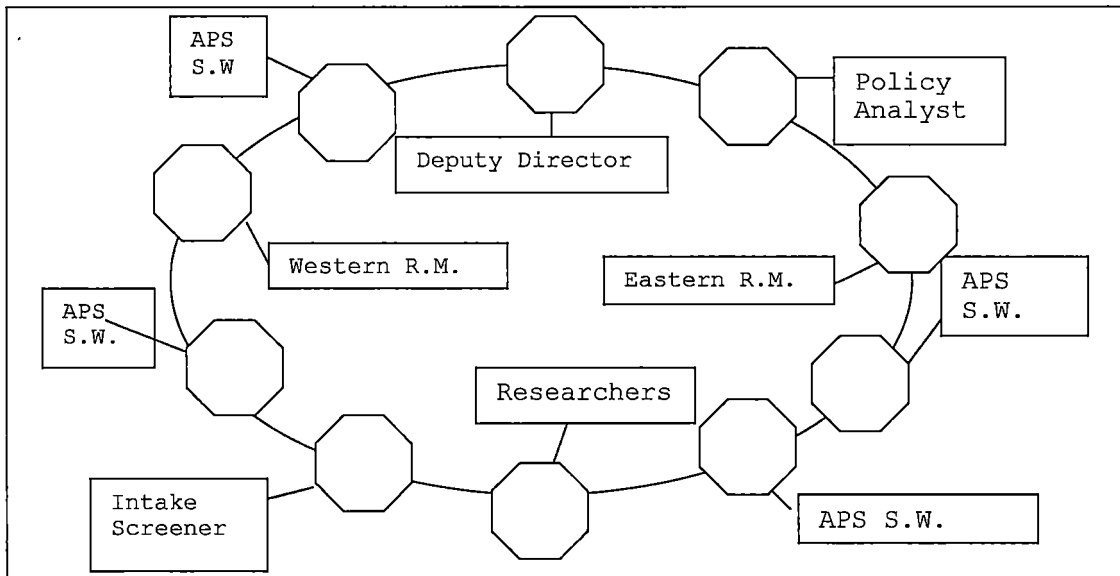visual representation of this Hermeneutic Circle:

Figure 1. Hermeneutic Circle

In order to create an initial list of perspective

candidates, the researchers attended a conference meeting

with the Western Regional Manager for Riverside County

APS. The purpose of this meeting was to obtain the

County's final approval of the research project (See

Appendix A) as well as to construct a list of initial

candidates who had previously expressed opinions for and against the SDM and major key players involved with the implementation of SDM. During the initial interviews with the key players, other perspective study candidates were identified because they held a different viewpoint on SDM than the initial group of key interviewees.

D.N. - Intake Screener

D.N. is an intake screener and a Social Worker V, which is the most experienced level of social worker in APS. His position was the first to utilize SDM as he is the first responder talking with the reporting parties. He has extensive social work education and experience with both CPS and APS. He was recommended by the Western Regional Manager due to his experience and education within the county and with SDM. Our interview was conducted in the Moreno Valley Office, where he is located. He discussed his experience as a screener and the ways in which he has felt the impact of SDM on the experience of his job. He stated that before SDM:

> Potential danger wasn't a very clear distinction
> [from imminent danger]...a lot of times I would just
> go with my feelings...oh my, where almost the drama
> of the story would pick me up and make me think,

well, that's just got to be an immediate...Since

SDM, it has certainly leveled out the way I do

assessments...the tool has much clearer definitions.

D.N. was very candid, open and enthusiastic about

utilizing the SDM tool. His themes surrounded safety,

response times, consistency and positive feelings of SDM.

V.N. - Adult Protective Services Social Worker

V.N. is a Social Worker V APS Investigator who is

responsible for investigating allegations of abuse and

neglect. She has extensive experience with both CPS and

with APS. She worked with CPS before and after

implementation of SDM in their unit and has now worked

with APS both before and after the SDM tool has been

implemented. V.N. was recommended by D.N. as an authority

at the investigator level. Her perspective on SDM in

Adult Services included both positive and negative

feelings as it was influenced by her previous exposure to

SDM in CPS. Similarly to other APS workers' experience,

V.N. stated that initially:

> There was a lot of extra work - hard to get through
>
> the trees the way it was designed. But it was a
>
> thing of change. Once everybody became adapted to

22

it, it was wonderful...I felt very comfortable with

it.

Her second theme that emerged during her interview was

the idea of protection of the social worker. Her later

statements implied that by implementing SDM, the social

worker's decisions are based upon a valid instrument

rather than an emotional reaction to each situation.

T.A. - Western Regional Manager

T.A. was our second interview. She is the Western

Regional Manager of Adult Services. Our interview was

conducted in the Moreno Valley Office, which is one of

multiple locations that she oversees. She was selected

because she had assisted the researchers in the

development of this project. She was very passionate

about the SDM tool and about Riverside County being the

first County to implement SDM in their Adult Services

Division. She focused on the tool's abilities to enhance

the skills of social workers but was also very connected

to the plight of the social workers working through the

process of implementing it. For instance, T.A. explained:

SDM does not negate the need for real social work

skill...it was simply developed to do what the title

says-structure their decision making...not to

prevent the need for them to use their own decision

making skills...when you use it, it's an awesome

outcome.

M.S. – Eastern Regional Manager

M.S. is the Regional Manager for Eastern Riverside

County. He has extensive social work education and

experience as a social worker and supervisor for CPS as

well as a manager over the Intake Screeners Unit of APS

and now as Regional Manager. He was chosen by the

researchers due to his experience supervising the

screening department upon implementation of SDM as well

as being a part of the conceptual planning team for SDM.

Fundamentally, he believes that the need for SDM is the

same in any protection agency, whether it is CPS or APS.

M.S. stated that:

SDM is a foundational process upon which we make

decisions. It doesn't replace your brain...it has to

be used at specific points with a breadth of

knowledge...it is a complex system that pulls

together knowledge, theory, law and practice...

He also believes that SDM provides consistency and

validity as it makes APS clear about its responsibilities

to the public. It distinguishes APS as a professional

agency based upon reliable tools to determine safety and

risk as well as to assure that similar situations will

result in similar outcomes because a professional tool is

used instead of the emotion of a social worker. He went

on to add that:

> In Child Welfare, they found that without having a
>
> solid decision making structure, that when they
>
> pulled 10 people in a room with the same scenario,
>
> they came up with just as many solutions, and it
>
> shouldn't be that high; that someone had almost a
>
> 50/50 chance of having their child pulled.

N.A. – Adult Protective Services Social Worker

N.A. is a Social Worker V as an investigator for APS

in the Cathedral City Office. She has extensive education

and has worked for CPS prior to SDM and now APS, both

before and after. Her interview contributed to many

themes of the overall construct and was peppered with

negative, positive and constructive feedback. In building

on the overall theme of consistency, she reiterated that

the SDM tool's greatest contribution was in defining who

a client of APS was and was not. For instance:

> It identified the criteria for dependent adult. The
>
> way I see it, it really narrowed down the mental

health field...just because someone has SSI and a

mental health problem, they don't necessarily meet

the criteria for dependent adult. And before, if

they were SSI they met that criteria. So in that way

it has narrowed it down a lot.

Her additional themes surrounded unnecessary utilization

of two-to-five day response times which, in her opinion,

needed to be severely refined in order to be effective.

And on the upswing, she stated that "the major thing

about the tool is that it keeps you focused. There are

certain things you do on every case." Her statement

demonstrates the strong parallel found in many of the

other constructs that coalesce around these themes of

consistency and clarity.

Anonymous Participant by Request – Adult
Protective Services Social Worker

This person is an Adult Protective Services

Investigator who also exhibits a significant amount of

education and experience. This interview was recommended

by a previous interviewee whose beliefs about SDM were

opposite to this person. This interview was brief; it

lasted only 16 minutes. This individual had very strong,

negative feelings regarding SDM and its usefulness.

It's too subjective. I still think there is still

too much room for interpretation by the person who

is actually using the tool...I don't know how much

field experience the screeners really have. I think

they don't really understand, when they have the

reporting party on the phone, what is really

involved in how to make a good assessment over the

phone.

This worker had difficulty identifying the usefulness of

the tool in adding consistency or clarity to his

decision-making and assessment of the actual situation.

L.H. - Deputy Director of Adult Services

L.H. is the Deputy Director of Adult Services. He

has extensive education and experience working in all

levels of adult services. He was chosen due to his

position of being director of all Adult Services for

Riverside County. During the interview process, the

researchers had the opportunity to meet him in person and

discussed with him alternative arrangements to an in

person interview as a result of limited availability. The

researchers recommended sending him the questions asked

to other interviewees and asked him to respond to those

questions via email. The themes in his interview surround

positive feelings about SDM and the consistency that the tool provides to the worker and agency. He stated that the tool "provides support to social workers in consistent decision making and provides management with information to assist in planning and resource allocation". His future hopes are that "more APS jurisdictions will become interested in the [safety tool and risk assessment] concepts. I'm proud that Riverside has been a trailblazer..."

R.B. – Policy Analyst

R.B. is the Policy Analyst for Riverside County's Adult Services Division. She has extensive social work education and experience as a field social worker prior to her current macro policy position. She was recommended by another interviewee who perceived her as having a very different opinion than that of other participants. Her interview was also completed via email due to schedule restrictions. The strongest element of her interview was regarding response times. She stated that "there [is] now consistency in the way response times are determined", which is comparable with previous constructs. Noting its similarity to other constructs, she stated that:

The screening tool has been very helpful and has

taken some pressure off the intake workers who

relied on themselves, peers, supervisors and

managers to make some of the tough decisions. It's

not a cure-all, but it's been an asset, particularly

for those who lack field experience.

Demographics

There were a total of nine participants. One

participant who initially agreed to participate later was

unavailable for an interview. Of the remaining eight

participants, four were female, four male, ages ranged

from 45-70 and all possessed a Master's Level Degree or

higher. Of the participants, four represented

administrative level positions while the remaining four

represented line staff level positions. See Figure 2

below:

Demographic Comparison by Gender

Representation by Degree & Position

3.5
3
2.5
2
1.5
1
0.5
0

MSW   Psychology   Admin   Staff

☐ Female
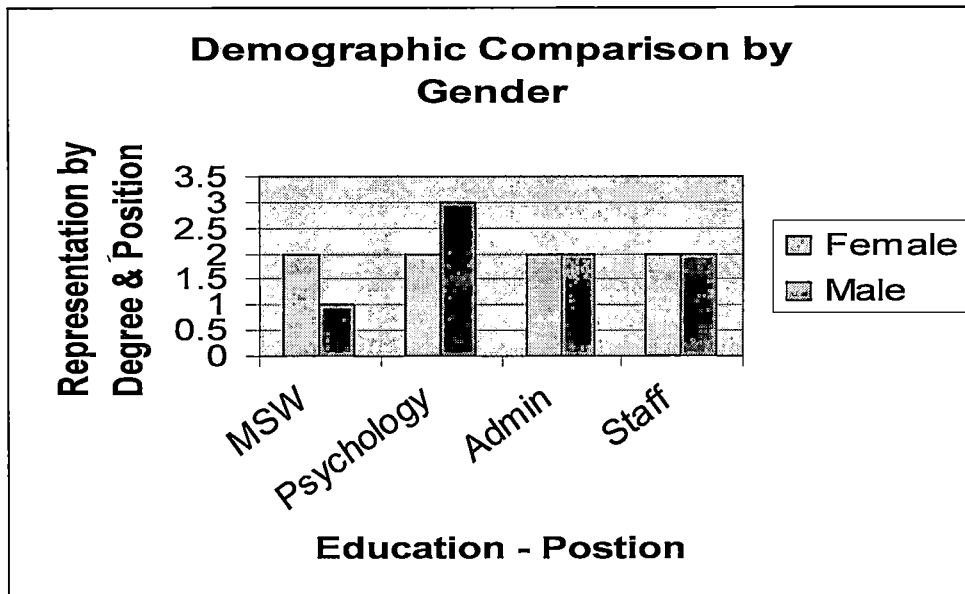☒ Male

Education - Postion

Figure 2. Demographics

Data Gathering

At the beginning of the research proposal, we had multiple individual perspectives which formed the Hermeneutic Dialectic Circle that produced the joint construct. The constructivist process is one "that starts with an open-ended approach and becomes more structured as the study progresses" (Morris, 2006, p. 224).

In other words, data was primarily gathered by recording multiple interviews with individuals who had direct contact with the SDM tool by virtue of its use during the intake/screening process, or indirect contact with the SDM tool by APS workers experience of the tool's

directive during their assessment phase of case

investigation. This allowed all gatekeepers and

stakeholders (in this case the Deputy Director of the

Riverside County Adult Services, the Western and Eastern

Regional Managers, Policy Analyst Administrator, Social

Workers and Intake/Screeners) at their respective sites

an equal opportunity to provide valuable input which

resulted in the formation of the joint construction

(Morris, 2006).

After informed consents to interview were obtained,

interviews were recorded via digital voice recorder and

then transcribed into a verbatim report of the interview.

The process of completing all of the interviews took

approximately 4 hours; the process of transcribing the

interviews took approximately 22 hours; data analysis

took approximately 7 hours.

Phases of Data Collection

The initial list of participants included: The

Deputy Director, Western and Eastern Regional Managers,

Intake Screener, and an APS Investigator. The first three

participants were the core members who envisioned and

implemented SDM under the original direction of P.M.,

predecessor of L.H., Deputy Director of Adult Services. D.N. and N.A. were also two of the initial social workers (Screening and Investigative respectively) involved in the planning team who appeared to express opposite opinions regarding the implementation of SDM.

Initial contact with all of the participants was made through email. Follow-up telephone calls were then made by the researchers to schedule convenient appointments at the various participants' field offices. Respect for office protocol was shown by obtaining permission to make such appointments.

In keeping with the constructivist paradigm, the researchers interviewed participants separately and encouraged each to describe his/her own perspective on SDM. The researchers utilized open coding, as described in the next chapter, to identify the major themes the participant touched on when discussing SDM and its impact. At the conclusion of each interview, the participants were asked to identify someone within the agency who held a different opinion from their own. In this way, the researchers obtained a comprehensive joint construct of responses to SDM that was representative of

all the points of view of the Riverside County Adult Protective Services.

Through this process, the Policy Analyst, additional APS investigator and the two initial confidential interviewees were identified. During subsequent interviews, the researchers developed and posed additional questions to add to the preliminary themes found in the previous interviews. This procedure allowed the researchers' initial questions to be refined to themes emerging from each perspective thereafter.

The final step in this constructivist research paradigm was to include each of the participants in a membership-checking meeting to review and discuss the emerging themes and to decide on one joint construct that encompassed each perspective. The barriers the researchers had to holding a membership-checking meeting included traveling distance, multiple schedules to coordinate and confidential interviewees. The distance between the two farthest district offices, Cathedral City and the city of Riverside, is over 70 miles each way, which created difficulty for the participants. The distance would have additionally required them to use their vacation time in order to attend the meeting.

33

The administrative participants had significant difficulty finding a time at which all could agree to meet without schedule conflicts. This particular barrier was also evident in the difficulty the researchers experienced in scheduling the individual interviews. Lastly, the researchers had two participants (representing nearly 20% of the total participants) who were willing to participate in the study but chose to have their identities remain confidential, thus unwilling to attend the membership-checking meeting.

Due to these barriers, the membership-checking meeting was conducted via email. The researchers compiled the emerging themes from each interview into a report that summarized a preliminary analysis of a potential joint construct. The researchers personally delivered, to each participant, a hard copy of the preliminary findings (See Appendix B). The report directed the participants to provide feedback and additional input, via email, to further refine the joint construct. Of the nine initial participants that were given the summaries, five responded to the researchers. The four that did not respond were the two confidential interviewees plus two administrators.

Data Recording

Upon retention of written permission from each individual participant, the initial interview was recorded digitally. Additional information was acquired through note-taking when warranted. The transcripts were individually transcribed into a Microsoft Word document by the researchers after each interview. In addition, a reflective journal entry was made for each interview, which included any additional notes and impressions the researchers felt were pertinent to the project.

Recordings, interview notes and artifacts will be locked up and destroyed after one year to assure confidentiality of the participants to the degree that a constructivist paradigm will allow.

Summary

The participants were individually vetted through a selection process that accounted for their positions within the County and their experiences of SDM. The process of data gathering via multiple interviews was discussed as well as the process of data recording and ways by which the researchers engaged the participants

through the process. Lastly, the recording and archiving

of data was presented.

CHAPTER FOUR

EVALUATION

Introduction

After the authenticity for each interview had been established, each narrative was then analyzed using a bottom-up approach via open coding, by which categories of information are fashioned to give a preliminary dimensional look at the narrative. Further analysis via the process of axial coding created categorical data which linked the information to a centralized theme. Finally, the linked data was selectively coded into an overall construct which established a plausible "story-line" or a view of "what was really emerging" around SDM when it was introduced into the human condition and environment (Morris, 2006).

The overall construct resulted in a visual network of emergent patterns. From this pattern, the researchers were able to construct a Conditional Matrix which further delineated emerging themes and patterns as a result of the implementation and use of SDM as a viable tool in the risk and safety management of elder abuse and neglect.

Open Coding

By the end of the interviews, there were three

distinct groupings of codes: Minor Codes, Reactive Codes

and Major Codes. The three minor codes that had emerged

during data analysis were Experience, Qualifications and

Spirituality. They were uncovered during analysis by the

researchers; however they were not critical to the

overall construct of SDM and only served as incidental

demographic information. The researchers' analysis

discovered reactive codes as repetitive descriptors of

the major codes. The reactive codes were grouped into two

sub-categories. The first sub category surrounded SDM.

"New" identified changes after SDM implementation whereas

"Original" identified qualities of APS prior to SDM. The

second sub-category of reactive codes dealt with feelings

associated with all aspects of SDM implementation. The

three feelings identified were Positive, Negative and

Overwhelming. There were five minor codes that were

gleaned from the interviews; however, these codes served

merely as descriptors of the nature of SDM. These five

minor codes are: new perceptions, original perceptions,

positive feelings, negative feelings and overwhelming

feelings. The five main codes that were identified as

core themes to understanding perceptions of Riverside County APS's SDM implementation were as follows: Education, More Work, Response Times, Safety and Consistency.

Minor Codes

Original Perceptions. Original perceptions were defined by the researchers as those feelings about SDM before it was implemented with Adult Services. This code primarily illustrates the perceptions of workers who dealt with a similar model of SDM in CPS and are now experiencing the implementation of SDM with APS. D.N. described his original perceptions of doing APS screening without SDM by stating that "...a lot of times I would just go by my feelings. Oh my! Where almost the drama of the story would pick me up and make me think, well it is just going to be an immediate!" (Personal Interview, D.N.)

New Perceptions. New perceptions were defined by the researchers as feelings that resulted from the implementation of SDM in APS. N.A. explained that "It defined the criteria for dependent adult...it really narrowed down the mental health field" (Personal Interview, N.A.).

Positive Feelings. Positive feelings about SDM were defined by the researchers as those feelings which led to an increased feeling of job satisfaction and/or competency in a worker's perception of his/her job. L.H. described being "...proud that Riverside has been a trailblazer and I am confident that once the tools have been used over time here in Riverside, there will be additional counties coming on board" (Personal Interview, L.H.).

Negative Feelings. Negative feelings of SDM were defined by the researchers as those feelings directed at the tool which led to a loss of autonomy, an increased sense of being controlled by the tool and/or a decreased sense of job satisfaction. One participant described having "...a lot more paperwork involved," which was decreasing his overall job satisfaction. (Personal Interview, Anonymous)

Overwhelming Feelings. Overwhelming feelings of SDM were defined by the researchers as feelings of astonishment, shock or disbelief as a result of SDM. T.A. described that as a manager, "I was appalled to realize that there was no specific screeners' training and that this is one of our goals" (Personal Interview, T.A.).

40

Major Codes

Education. Education was defined by the researchers and described by many participants as a foundational requirement for effective APS workers. The Western Regional Manager stated, "I feel a lot more comfortable there is a trained social worker on the phone taking those calls because risk assessment starts at the time you take the call" (Personal Interview, T.A.). The differences between CPS and APS were also noted by multiple participants. Particularly, that "CPS...uses what they call an intake specialist, and it doesn't require any type of social work background and it doesn't requires any type of degree," which is significantly less than the requirements of an APS Intake Screener (Personal Interview, T.A.).

More Work. More work was defined by the researchers as being primarily associated with the additional paperwork and time that was required when SDM was implemented:

> When the screening tool first came out, there was a lot of extra work. Hard to get through the trees the way it was designed but it was a thing of change.

Once everybody became adapted to it, it was wonderful. (Personal Interview, V.N.)

Response Times. Response times were defined by the researchers as any changes resulting from the implementation of SDM in the number of days required for social workers to respond to APS referrals. M.S. stated that "...there was an increase in the number of two-to-five day referrals" (Personal Interview, M.S.). T.A. described this change; "[It was]...interesting and alarming to me that there [were] a lot of the things that we [had] been pushing into the 10-day response category...[that] should have been utilizing a two-to-five day [response]" (Personal Interview, T.A.)

Safety. Safety was defined by the researchers as those statements which provided protection for the client, worker and/or agency. Safety was depicted by one of the participants as "SDM addresses the types of abuse: physical, emotional, sexual, financial, neglect..." (Personal Interview, D.N.) as well as "...the tool is focusing on those few minutes of time, when they come in and do this very complex assessment...they need to be reasonably assured the person will not be dead by tomorrow" (Personal Interview, M.S.).

Consistency. The most repeatedly used code by the participants was consistency. Consistency was defined by the researchers as statements made about SDM that surrounded qualities such as reliability, clarity, uniformity and predictability. V.N. depicted SDM by stating that "...it eliminates some of the gray area" (Personal Interview, V.N.) and adds, "the tools make it clearer who actually can be served by APS. I think the tools are making our response time decisions more consistent" (Personal Interview, L.H.).

Axial Coding

Axial Coding, from a constructivist perspective, is "the procedure for linking the emergent categories and making statements about the relationship between categories and their dimensions" (Morris, 2006, p. 115). Instead of limiting the joint construct by linear dimensional frameworks, the researchers chose to utilize an eco-map visualization. The eco-map visualization was the researchers' adaptation of axial coding which better served to illustrate the facets of SDM.

The following eco-maps all have the same common structural components. They are as follows:

43

Icon	Description
	Primary Major Code
	Major Code of Figure
	Minor Codes
	Direction of Influence
	Slight Attachment of Codes
	Noteworthy Attachment of Codes
	Considerable Attachment of Codes
	Significant Attachment of Codes
	Incongruent Attachment of Codes

Figure 3. Eco-map Key

Figures 3 illustrate the eco-map visualization of the

conditional matrices from the constructivist perspective.

The previously described major codes are: Education, More

Work, Response Times, Safety and Consistency. They are

illustrated in the following eco-maps.

Education

Regarding education, there was significant

discussion of whether SDM would increase or decrease the

need for advanced education. The overall consensus was

that advanced education will lead to increased safety

through screeners and workers having more critical

thinking skills required to address risk and safety

issues. Also, higher education levels will still be

required of social workers at all levels within APS even

though there has been significant discussion of CPS'

reduction of educational qualifications for intake

screeners and social workers (See Figure 4). This has

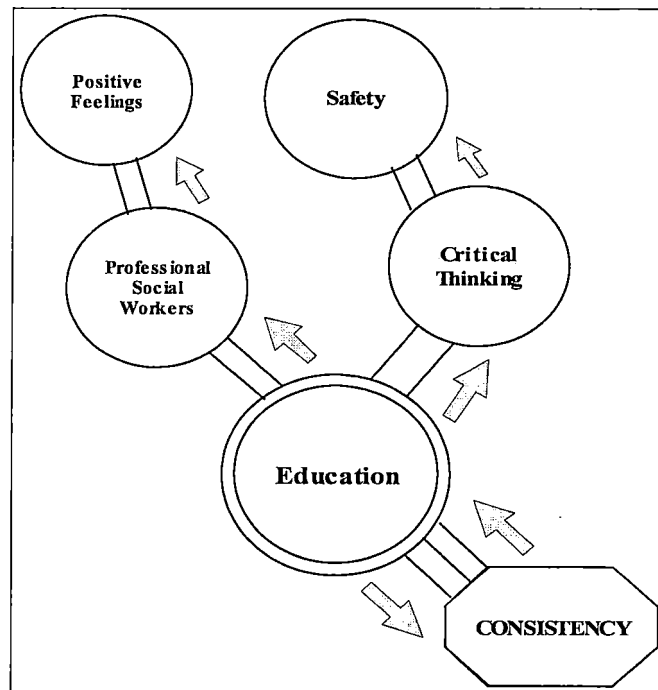generated positive feelings and safety overall.

Figure 4. Education Matrix

More Work

On to the point of contention which was discussed at

all levels within the County: more work! Increasing the

workload of social workers was met with positive and
overwhelming as well as negative feelings (See Figure 5).
Negative feelings stemmed from having less individual
decision making as well as more papers to fill out, but
the increased work further resulted in increased social
worker protection, which appears to be an appropriate
trade-off. Overwhelming feelings were directly related to
implementing a change agent into an already over-burdened
departmental system. Even though there were negative
feelings which have always been associated with more
work, there were significant positive points to note.
Increased work was positively associated with increased
consistency, which again resulted in increased safety.
Therefore, as SDM appears to initially require more work,
it results in increased consistency and safety.
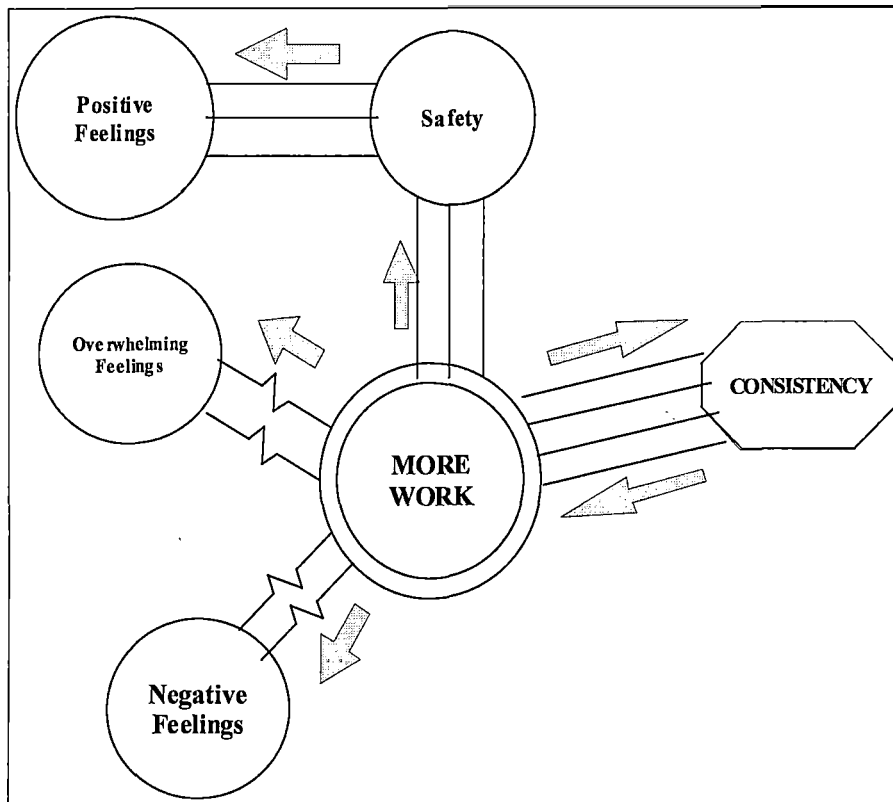
Figure 5. More Work Matrix

Response Times

Response times received a lot of emotion from workers within the interviews. There were a significant amount of negative feelings initially attached to the resulting increased number of response times. Even though SDM created increased response times as a byproduct, the overall affect was to create protection of the client and social worker due to SDM's consistent standards of risk assessment (See Figure 6).

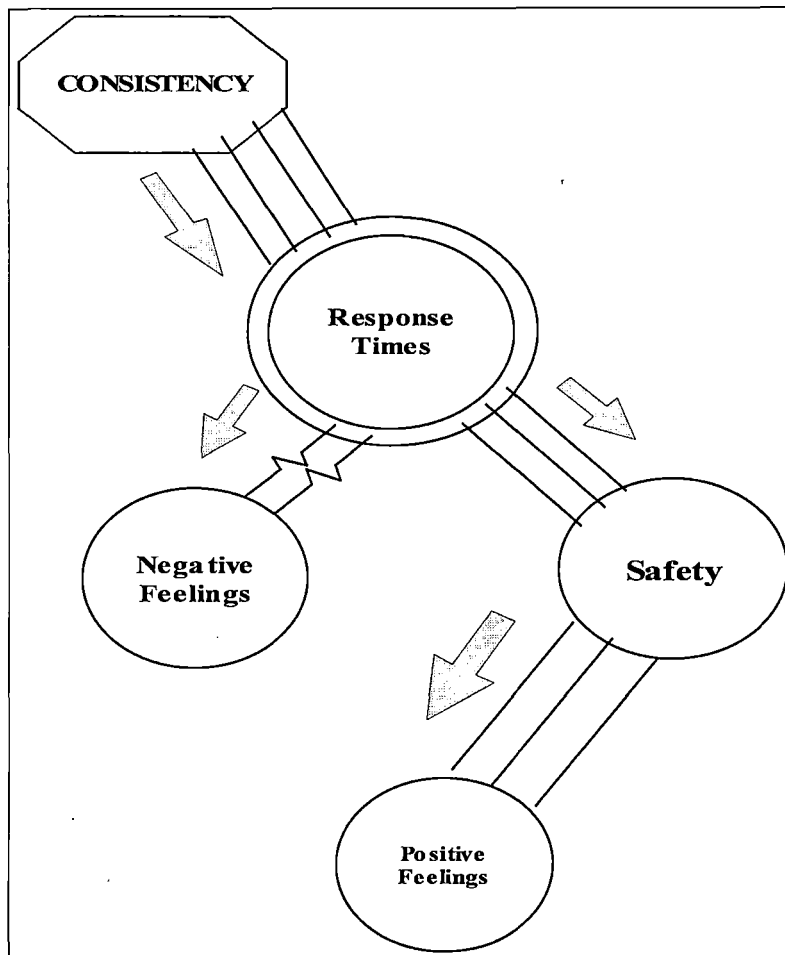Figure 6. Response Times Matrix

Safety

 Safety has been strongly connected with idea of

Consistency (see Figure 7). When various participants

discussed safety in light of consistency, SDM appeared to

create a sense of protection to social workers as it

provided them with more structure.

 It was also noted that the consistency associated

with SDM gave a certain amount of protection for the

agency simply due to the fact that it protected its

workers. (Then, as an additional indirect result, safety

was also connected to increasing protection for the

clients.) Each of these reinforced positive feelings

within the agency.
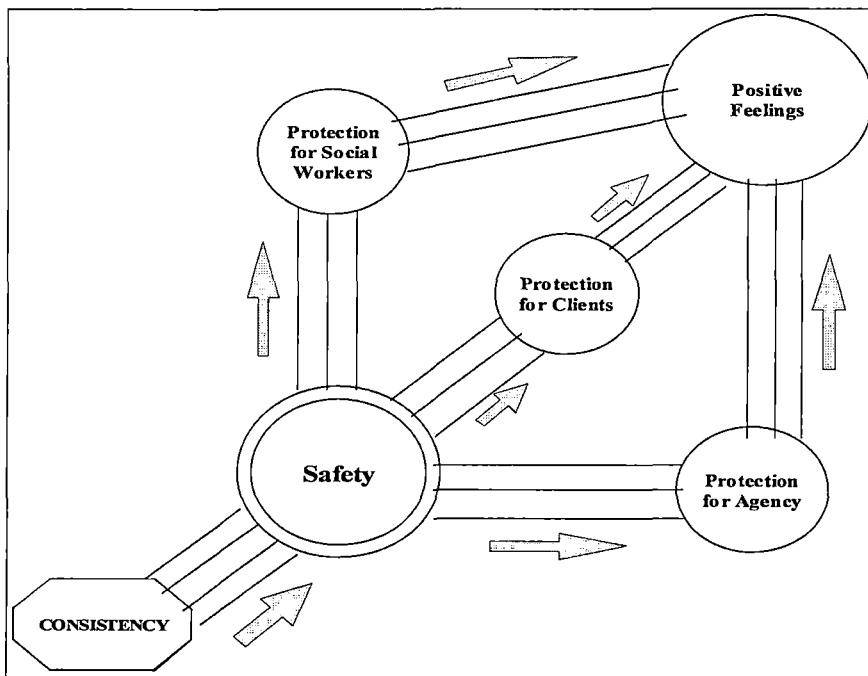
Figure 7. Safety Matrix

Consistency: The Overall Construct

Our constructivist study of SDM revealed consistency

as the central theme. The central relationships that were

connected to consistency included Education, More Work,

Response Times and Safety (See Figure 8). The single

unifying construct throughout each theme was consistency.

In every interview, this compelling concept was the

common thread tying each individual's perspective of SDM

together. This project has shown that the central benefit

that SDM has provided has been a heightened sense of

consistency. Consistency has not had the impact of making

a new program, but it has appeared to enhance and

strengthen the already existing structure.

Figure 8. Consistency Matrix

Implications of Findings for Micro and/or Macro Practice

This study added to the knowledge of social work

practice at both micro and macro levels of human

organization. In the assessment phase, it was discussed that in order for an organization to survive, it must adapt to internal and external environments.
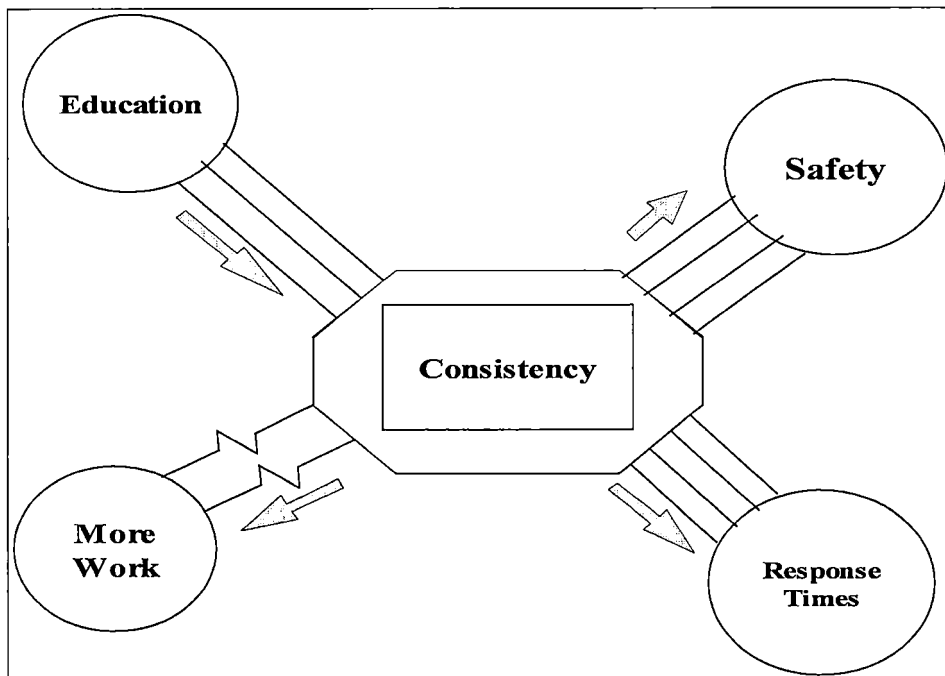
Micro Practice Implications

The research study supplemented micro social work practice by revealing that unstructured human decision-making may not be the most effective tool in determining safety and risk assessments. Furthermore, SDM is an essential tool to assist social workers in accurately determining the severity and risk of abuse and appropriate steps to take to most effectively work with their clients. Therefore, by addressing the internal processes that the workers utilize, SDM assists the agency in adapting to the necessary protections of both workers and clients.

Macro Practice Implications

This research study contributes to macro social work practice as it depicts the benefits for SDM models to be implemented in all county agencies for accurate risk and safety assessment of elder and dependent adult abuse and neglect. Therefore, in order to address external changes in the environment that affect outcome measures, the County has chosen to utilize SDM as an appropriate

strategy to strengthen and protect their agency, their
workers and their population. The potential benefit SDM
provides includes its further use in other areas of APS
such as social workers' investigations. As a result, this
benefit increases the probability that SDM will serve as
the safety risk assessment tool to be implemented in
other counties across the nation.

Summary

From the story-line, an overall construct emerged
and was illustrated via the use of an adapted organic
method of the open and axial coding processes. These
processes generated five minor and five major codes that
were repeatedly used by all the participants. The
researchers developed figures that depicted the
relationships between the major and minor codes, with the
significant theme being that of consistency. Resultantly,
the primary construct that emerged surrounding the idea
of consistency suggests significant micro and macro
implications for future use of SDM in adult services
agencies.

CHAPTER FIVE

TERMINATION AND FOLLOW UP

Introduction

The final task of the researchers was to complete a

formal membership-checking meeting whereby the

researchers formalized and invited the development of the

joint construct by each of the participants. The creation

of the joint construct began the termination of the study

and the researchers exit from the study environment.

Responsibility for continuation of input from social

workers regarding their perceptions of SDM was

transferred to the County of Riverside APS.

Communicating Findings to Study
Site and Study Participants

During the study, the participants were engaged

through interviews with the researchers to formalize

their own individual constructs as well as to give

feedback on the constructs of others within the group. At

the end of the study, the participants were invited to

attend a membership-checking meeting to discuss their own

constructs and the constructs of others as well as to

assist the group in developing a joint construct. As a

result of several barriers including traveling distances between district offices, the great demands of job responsibilities and the necessity to protect some confidential interviewees, a formal hermeneutic dialectic membership-checking meeting was not possible. In lieu of a membership-checking meeting, the researchers attempted an informal membership-checking meeting via the intra-office County email and internet. The researchers produced a preliminary analysis of the research findings which was distributed to each member for further interpretation and clarification in order to generate the final joint construct. This process enabled the researchers to empower the group to continue the hermeneutic dialectic as an independent group, even if via internet. Following this empowerment process, the researchers will only be available for resource referrals (Morris, 2006). An avenue of continuation for the dialectic in order to encourage the regional managers and district office supervisors would be to include dialogue about the findings during monthly staff meetings when convenient and appropriate.

Termination of Study

The termination of the study was very open from the beginning of the project. The participants were informed that the culmination of the research project would be the membership-checking meeting and that the researchers would disengage after the meeting. As the meeting was completed via internet rather than in person, the researchers therefore disengaged after the initial results had been given to each member. Had the membership-checking meeting occurred, the researchers would have gathered additional input regarding the perceptions of the participants and their feelings about taking part in the study. All of the participants had already been given a debriefing form in case there were any further concerns (Morris, 2006).

The researchers also exited the research setting. In order to complete this process, the researchers modeled the constructivist perspective and encouraged the participants to continue discussion of the SDM model in formal and informal settings. The researchers decreased their availability to the participants as contact with the group diminished to facilitate the team in becoming more independent. The researchers provided the group with

appropriate resources as necessary, which included

contact information about the researchers and the project

references in order to support the future independent

functioning of the group (Morris, 2006).

Ongoing Relationship with Study Participants

During the study, the participants were engaged

through interviews with the researchers to formalize

their own individual construct as well as to give

feedback on the constructs of others in the group. After

transcription of each participant's interview, a copy was

emailed to the individual for input to ensure accuracy of

their thought process. At the end of the study, the

participants were engaged in an internet

membership-checking meeting to discuss their own

constructs versus the tentative joint construct. After

the membership-checking meeting, the researchers

attempted to empower the group to continue the

hermeneutic dialectic independently and let it be known

that the researchers would only be available for resource

referrals (Morris, 2006).

Summary

Communication of findings to the study site participants was discussed along with the proposal of the membership-checking meeting. The study was subsequently terminated and the researchers disengaged from the research study. The goal of this process was to empower the County to incorporate the research findings as additional evidence supporting the continued development of SDM within the County of Riverside APS.

APPENDIX A

QUESTIONNAIRE

Questions Proposed to Riverside County APS Workers

What are your previous social work experiences, relevant employment, and education background?

On what basis, before SDM, did you determine response times? Immediate Only, 2-5 day, 10 day, Information Only (IR, 2-5 day, 10 day, I/O?)

To what extent was the SDM training helpful? Was there anything else that should have been included?

What differences have you noted with the implementation of SDM?

Is SDM making different response times than you may have reported without using it? How so?

Overall, what do you think is working with the SDM? What is not working well? What suggestions do you have to make it better?

What impact has SDM had on your experience of your job?

Specifically for the social workers responding to referrals: Have the response times changed from before using SDM? To what extent have the response times been accurate since the implementation of SDM?

APPENDIX B

INFORMED CONSENT

INFORMED CONSENT

The study in which you are being asked to participate is designed to investigate the effectiveness of the implementation and use of Structured Decision-Making (SDM) in Adult Protective Service risk assessment screening. This study is being conducted by Christy Herff and Joseph LoCoco under the supervision of Dr. Teresa Morris and Dr. Tom Davis, of the College of Social and Behavioral Sciences/Department of Social Work. This study has been approved by the Department of Social Work Sub-Committee of the Institutional Review Board, California State University, San Bernardino.

There are two parts to this research study. In the first part of the study, you will be asked by way of interview to respond in your own words to several questions regarding the implementation and use of Structured Decision Making in Adult Protective Services (I. e. What differences have you noted with the implementation of SDM?). You are free not to answer any of the questions. The interview should take about 30 to 60 minutes to complete. Review of the transcribed interview at the participant's convenience on a subsequent date should take no more than 10-15 if desired. Each person interviewed will expand the number of opinions and will have the option to comment on other opinions previously reported to the researchers. Your name will not be reported with your responses. It is possible, that due to the nature of our research method, that your identity may be revealed through your opinion even though your name will not be disclosed.

The second part of the research study is to collaboratively meet to discuss the various opinions regarding SDM with the goal of developing a joint perspective which embraces all opinions. This would be a face to face group meeting by all the study participants the researchers had previously interviewed. Participating in this meeting is completely voluntary, even after participating in the original interviews. You may withdraw from participation in the study at any time. If you would like to receive the group results of this study after its completion (after June 30, 2007), it will be available at California State University, San Bernardino, Pfau Library.

It is expected that the benefits of this study will afford both the subject and the agency a greater understanding and practical information to enhance the effectives of the SDM tool in is application of risk assessment in Adult Protective Services. In so far as the nature of the qualitative interview allows, the risk of discomfort or anxiety to the subject are expected to be minimal and the subject should in no way feel that his or her responses to the interview questions will in any way jeopardize their status as an employee with Adult Protective Services. If you have any questions or concerns about this study, please fell free to contact **Dr. Tom Davis (909) 537-3839**.

By placing a check mark in the box below, I acknowledge that I have been informed of, and that I understand, the nature and purpose of this study, and I freely consent to participate. I acknowledge that the group meeting is completely voluntary and that I am not required to participate even after participating in the interview. I also acknowledge that I am at least 18 years of age.

Place a check mark here ☐

Today's date: _____

Today's date: _____ CALIFORNIA STATE UNIVERSITY, SAN BERNARDINO
SOCIAL WORK INSTITUTIONAL REVIEW BOARD SUB-COMMITTEE
APPROVED 5/19/06 VOID AFTER 5/19/07
IRB# 31)0540 CHAIR

APPENDIX C

DEBRIEFING STATEMENT

DEBRIEFING STATEMENT

Study of Structured Decision Making

This study you have just completed was designed to investigate various perspectives of Riverside County Adult Protective Service's Structured Decision Making Model. In this study, each participant was interviewed to develop each person's individual construct (beliefs) as well as to create a joint construct based upon each individual construct at the membership-checking meeting. We are particularly interested in the differences between using the SDM and previous methods of risk assessment utilized by social workers.

Thank you for your participation and for not discussing your individual constructs or the joint construct, with others. If you have any questions about the study, please feel free to contact Professor **Dr. Tom Davis** at **(909)-537-3839**. If you would like to obtain a copy of the group results of this study, please contact the CSUSB Pfau Library or Riverside County Department of Social Services / Adult Protective Services Division.

REFERENCES

Bergeron, R. L. (1999). Decision-making and adult
     protective services workers: Identifying critical
     factors. *Journal of Elder Abuse & Neglect, 10*(3/4),
     87-113.

Berk, L. E. (1998). Physical and cognitive development in
     adolescence. *Development Throughout the Lifespan,*
     (p. 350-384). Needham Heights, MA: Allyn & Bacon.

Daly, J. M., Jogerst, G. J., Haigh, K. M., Leeney, J. L.,
     & Dawson, J. D. (2005). APS workers job requirements
     associated with elder abuse rates. *Social Work in
     Health Care, 40*(3), 89-102

Girot, E. A. (2000). Graduate nurses: Critical thinkers
     or better decision makers? *Journal of Advanced
     Nursing, 31*(2), 288-297.

Halpern, D. F. (1998). Teaching critical thinking for
     transfer across domains. *American Psychologist,
     53*(4), 449-455.

Jogerst, G. J., Daly, J. M., & Ingram, J. (2001).
     National elder abuse questionnaire: Summary of adult
     protective service investigator response. *Journal of
     Elder Abuse & Neglect, 13*(4), 39-71

Johnson, K., & Wagner, D. (2005). Evaluation of
     Michigan's foster care case management system.
     Research on Social Work Practice, 15(5), 372-380.

Jones, S. A., & Brown, L. N. (1991). Critical thinking:
     Impact on nursing education. *Journal of Advanced
     Nursing, 16,* 529-533.

Juvenile Justice Bulletin. (2001). *Preventing delinquency
     through improved child protect.* Retrieved December
     1, 2005, from http://www.ncjrs.org/html/ojjdp/
     jjbul2001_7_1/page6.html

Mixon, P. M. (1995). An adult protective services
     perspective. *Journal of Elder Abuse and Neglect,
     7*(2/3), 69-87.

Morris, T. (2006). *Social work research methods: Four alternative paradigms*. Thousand Oaks, CA: Sage Publications.

Munro, E. (1999). Common errors of reasoning in child protection work. *Child Abuse & Neglect, 23*(8), 745-758.

Schmid, H. (2002). Agency-environment relations: Understanding task environment. In R. Patti (Ed.), *Social welfare management* (1st ed., pp. 138-139). Thousand Oaks, CA: Sage Publications, Inc..

ASSIGNED RESPONSIBILITIES PAGE

This was a two-person project where authors collaborated throughout. However, for each phase of the project, certain authors took primary responsibility. These responsibilities were assigned in the manner listed below.

1. Data Collection:

    Team Effort: Joseph LoCoco & Christy Anne Herff

2. Data Entry and Analysis:

    Team Effort: Joseph LoCoco & Christy Anne Herff

3. Writing Report and Presentation of Findings:

    a. Introduction and Literature

        Team Effort: Joseph LoCoco & Christy Anne Herff

    b. Methods

        Team Effort: Joseph LoCoco & Christy Anne Herff

    c. Results

        Team Effort: Joseph LoCoco & Christy Anne Herff

    d. Discussion

        Team Effort: Joseph LoCoco & Christy Anne Herff