Relationship Between Professional Quality of Life and Cognitive Flexibility Among Doctors

Dissertation submitted in partial fulfillment of the requirements for the award of

Bachelor of Science in Psychology

By

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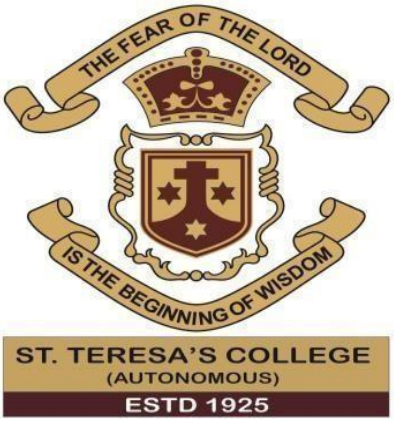

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Declaration

I, Devika R Mohan, do hereby declare that the work represented in the dissertation embodies the results of the original research work done by me in St. Teresa's College, Ernakulam under the supervision and guidance of Ms. Jisha Sekhar, Assistant Professor, Department of Psychology, St. Teresa's College, Ernakulam, it has not been submitted by me to any other university or institution for the award of any degree, diploma, fellowship, title or recognition before.

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Abstract

The current study investigated the relationship between professional quality of life and cognitive flexibility among doctors. Professional quality of life is defined as the quality one person feels in relation to their work as a helper. (Stamm,2010). Professional quality of life includes compassion satisfaction, compassion fatigue, burnout, and secondary traumatic stress. Cognitive flexibility, defined as the ability to generate diverse explanations and solutions for life's challenges (Dennis & Vander Wal, 2010). The sample consisted of 100 practicing allopathic doctors. The data was collected using the Professional Quality of Life Scale Version 5 (Stamm and Figley,2009) and the Cognitive Flexibility Inventory(Dennis and Vander Wall,2010). Spearman rank correlation and regression analysis were used for data analysis. The results revealed a moderate positive correlation between compassion satisfaction and cognitive flexibility, a weak negative correlation between compassion fatigue and cognitive flexibility, a moderate negative correlation between burnout and cognitive flexibility, and a weak negative correlation between secondary traumatic stress and cognitive flexibility. The study promotes the mental well-being of doctors and its effect on the efficiency of healthcare systems and patient care.

Keywords: Professional quality of life, Cognitive flexibility, Doctors

CHAPTER I

INTRODUCTION

"If you actually are a doctor and admitted it, you'd say, 'I don't cure a huge percentage, I don't have a 50 percent cure rate ... but I can have a 100 percent compassion rate". (Patch Adams)

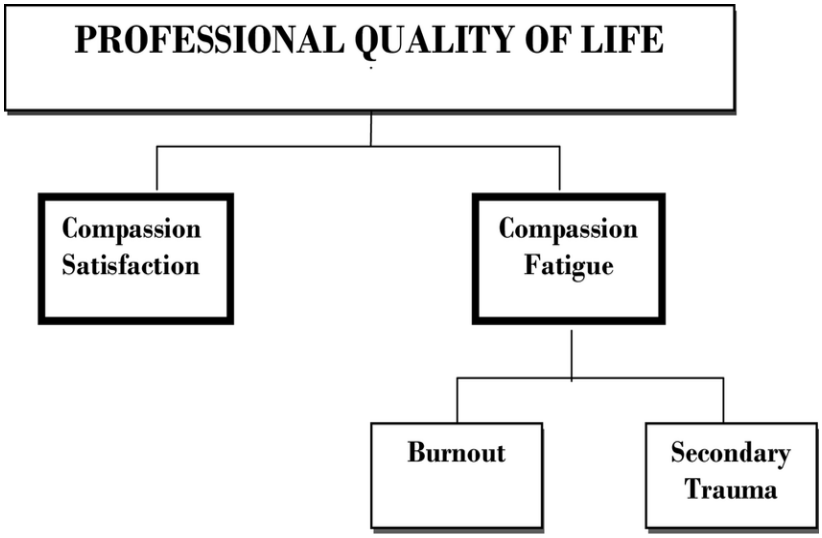
Compassion is an essential soft skill required by doctors because of which they are expected to behave with extreme emotional control. Cognitive flexibility is an important skill for doctors to have the ability to adapt and switch between different cognitive processes or tasks. From diagnosis, developing treatment plans, handling medical emergencies, communicating with the patients, and continuously learning and adapting to their approach accordingly. The mental health of doctors is neglected most of the time as their expected to be emotionally resilient. This extreme pressure to meet expectations can affect them adversely and this could interfere with their professional capabilities.

Professional Quality of Life

Professional quality of life is defined as "the quality one person feels and relation to their work as a helper." (Beth Hudnall Stamm,2010)

Professional Quality of Life (PQOL) refers to the overall well-being of individuals who work in professions that involve helping others, such as healthcare professionals, social workers, and counselors. The concept of Professional Quality of Life (ProQoL) was first mentioned by Figley (1995).

Understanding and monitoring one's PQOL is crucial because individuals in helping professions are at risk of experiencing both positive and negative effects related to their work. It is affected by client, work, and personal environment.



Compassion satisfaction (CS) is defined as the amount of pleasure derived from helping others (Stamm, 2005). It has been found to correlate positively with resilience, that is, the ability to cope, learn, and grow from difficult experiences (Burnett & Wahl, 2015) measures the positive aspects of helping others and the satisfaction derived from one's work. It reflects the joy and fulfillment experienced by individuals when they can make a positive impact on the lives of others.

Compassion fatigue is the deep physical, emotional, and spiritual exhaustion that can result from working day to day in an intense caregiving environment (Charles Figley). It is a condition characterized by a gradual lessening of compassion over time.

Secondary traumatic stress is the psychological distress that arises from indirect exposure to the trauma experienced by others (Charles Figley). It can lead to symptoms similar to PTSD.

Burnout is a state of physical, emotional**,** and mental exhaustion that results from long-term involvement in work situations that are emotionally demanding (Wilmer B Sheifali, Esther R Greenglass). This component is associated with feelings of emotional exhaustion,

depersonalization, and a reduced sense of personal accomplishment. It is relevant for individuals who work in high-stress and demanding environments.

Theories Associated with Professional Quality of Life

Professional Quality of Life Model. The theory was proposed by Beth Hudnall Stamm and Eric Gentry (2016). This model encompasses three components: compassion satisfaction, burnout, and secondary traumatic stress. It suggests that individuals experience a combination of positive and negative effects related to their work with traumatized individuals.

Stamms Conceptualization of Compassion Fatigue. The theory was proposed by Beth Hudnall Stamm (2009). Stamm's model expands the understanding of compassion fatigue by incorporating both the professional and personal aspects of an individual's life. It includes various factors such as workload, lack of self-care, and exposure to trauma that contribute to the development of compassion fatigue.

Figley Compassion Fatigue Model. The theory was proposed by Charles Figley (1995). Figley's model identifies two main components of compassion fatigue: "compassion stress" and "burnout." Compassion stress results from the emotional demands of empathizing with the suffering of others, while burnout is associated with work-related stressors and the cumulative impact of helping others.

Adaptive Information Processing Model. The theory was proposed by Laurie Anne Pearlman and Karen Saakvitne (1995). This model, often applied in the context of trauma, suggests that individuals process traumatic experiences differently. Compassion fatigue may occur when caregivers are exposed to the traumatic material of others and struggle to process or integrate these experiences, leading to emotional exhaustion.

Positive Psychology at Workplace. The theory was proposed by Martin E.P. Seligman, and Mihaly Csikszentmihalyi (2000). Positive psychology interventions, such as focusing on strengths, positive emotions, and work engagement, are applied to enhance well-being and satisfaction in the workplace. This approach contributes to the positive aspect of professional quality of life

Job Demands Control Support Model. The theory was proposed by Robert Karasek and Tores Theorell (1992). This model focuses on the interplay between job demands, job control, and social support in influencing employee well-being. Jobs with high demands and low control are associated with higher stress and potential burnout

Job Characteristics Model. The theory was proposed by J Richard Hackman and Greg Oldham (1976). This model emphasizes the impact of job characteristics, such as skill variety, task identity, task significance, autonomy, and feedback, on employee motivation, satisfaction, and well-being. Jobs with positive characteristics are expected to contribute to a better professional quality of life.

Demand Resource (JD-R) Model. This theory was proposed by Arnold Bakker and Evangelia Demerouti (2007). The JD-R model posits that job demands and resources influence well-being at work. Demands, such as workload and emotional labour, can lead to burnout, while resources, like social support and autonomy, contribute to job satisfaction and professional fulfilment.

Mashlac Burnout Model. The theory was proposed by Christina Maslach and Susan E. Jackson (1981). This model identifies burnout as a three-dimensional syndrome characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment. It is particularly relevant to understanding the negative aspects of professional quality of life, especially in high-stress professions.

Transactional Model of Stress and Coping. The theory was proposed by Richard S. Lazarus and Susan Folkman (1984). This model applied to compassion fatigue, suggests that stress results from the interaction between the demands of caregiving and an individual's coping resources. Coping strategies and the appraisal of stressors play a role in the development and management of compassion fatigue.

Trauma-Informed Care Model. The theory was proposed by Heman J L (1997). trauma-informed care emphasizes creating an organizational culture that is sensitive to the impact of trauma on both clients and caregivers. It recognizes the potential for compassion fatigue and promotes practices that support the well-being of caregivers.

Risk and Protective Factors Model. The theory was proposed by Eric Gentry (2000). This model identifies both risk factors (e.g., workload, exposure to trauma, lack of support) and protective factors (e.g., self-care practices, supervision, social support) that contribute to or mitigate the development of compassion fatigue.

Secondary Traumatic Stress Model. The theory was proposed by Charles Figley (1995). This model focuses on the emotional and psychological impact of indirect exposure to trauma. It suggests that individuals who work closely with trauma survivors may experience symptoms similar to those of the survivors themselves, including intrusive thoughts, nightmares, and emotional numbing.

Cognitive Appraisal Theory. The theory was proposed by Richard Lazarus (1999). According to this theory, emotions, including compassion, are the result of cognitive appraisals of a situation. Compassion may arise when individuals perceive someone in need and appraise the situation as relevant to their values and goals.

Evolutionary Theory. The theory was proposed by Charles Darwin (1871). This theory suggests that compassion has evolutionary roots and has been shaped by natural

selection. The ability to feel and express compassion is seen as adaptive for social species, promoting cooperation, altruism, and caregiving behaviours that contribute to group survival.

Social Exchange Theory. The theory was proposed by George Homans and Peter Blau (1958). Social exchange theory posits that individuals engage in social interactions based on the expectation of reciprocal benefits. Compassionate acts are seen as part of a social exchange where individuals may receive emotional or material rewards in return for their compassion.

Nutritive Generosity Model. The theory was proposed by Jonathan Haidt (2010). This model suggests that compassion is linked to an evolved capacity for moral and prosocial behaviour. Compassion is viewed as a key component in the development of generosity and altruism in individuals and societies.

Social Learning Theory. The theory was described by Albert Bandura (1977). Social learning theory emphasizes the role of observation and modelling in the acquisition of behaviours. Compassion can be learned through observing compassionate acts in others and experiencing reinforcement for such behaviours.

Empathy Altruism Hypothesis. The theory was proposed by Daniel Batson (2011). The empathy-altruism hypothesis proposes that empathic concern for others can lead to altruistic behaviours. Compassion is seen as a motivator for helping others, driven by a genuine concern for their well-being rather than self-interest.

Factors Affecting Professional Quality of Life

Nature of Work. The demands and nature of the work itself, including workload, complexity, and exposure to trauma, can significantly impact ProQOL. (Maslach, C., Schaufeli, W. B., & Leiter, M. P., 2001).

Client Interactions. The quality and nature of interactions with clients or patients, including the level of empathy, trust, and positive outcomes, can influence ProQOL. (Gleichgerrcht, E., Decety, J., & Fiszman, A, 2014)

Organizational Support. The level of support provided by the organization, including supervision, resources, and policies promoting work-life balance, can impact ProQOL. (Leiter, M. P., & Maslach, C.,2009)

Supervision and Training. Adequate supervision and ongoing professional training contribute to skill development, confidence, and a sense of efficacy, positively influencing ProQOL. (Cohen-Katz, J., Wiley, S. D., Capuano, T., Baker, D. M., Shapiro, S., & Deitrick, L., 2005)

Workplace Culture. A positive and supportive workplace culture that values self-care, open communication, and a sense of community can enhance ProQOL. (Rathert, C., Williams, E. S., Lawrence, E. R., Halbesleben, J. R., & Ishfaq, T., 2012)

Personal Coping Strategies. The ability to employ effective coping strategies, both at work and in personal life, plays a crucial role in managing stress and preventing burnout. (Mealer, M., Conrad, D., Evans, J., Jooste, K., Solyntjes, J., Rothbaum, B., & Moss, M, 2014)

Ethical Dilemmas. Exposure to ethical dilemmas and moral distress can negatively impact ProQOL, particularly if professionals feel conflicted or compromised in their values. (Rushton, C. H., & Brooks-Brunn, J. A, 2016)

Recognition and Appreciation. Feeling recognized and appreciated for one's contributions can enhance feelings of satisfaction and contribute to positive ProQOL. (Shanafelt, T. D., West, C. P., Sinsky, C., Trockel, M., Tutty, M., Satele, D. V.,& Dyrbye, L. N, 2019)

Professional Identity. A strong and positive professional identity, including a sense of purpose and meaning in one's work, can positively influence ProQOL. (Dyrbye, L. N., Shanafelt, T. D., Balch, C. M., Satele, D., Sloan, J., & Freischlag, J, 2011).

Autonomy and Control. Professionals who have a sense of autonomy and control over their work may experience higher levels of satisfaction and lower levels of burnout. (Deci, E. L., & Ryan, R. M., 2000)

Social Support. Strong social support networks, both within and outside the workplace, contribute to emotional well-being and can act as a buffer against the negative impacts of work-related stress. (Cohen, S., & Wills, T. A. (1985)

Cognitive Flexibility

By cognitive flexibility, we mean the ability to spontaneously restructure one's knowledge, in many ways, in adaptive response to radically changing situational demands (Spiro and Jehng,1990).

The skill allows us to change between stimuli, operations, and mental sets is known as cognitive flexibility (Lin et al.,2013)

Cognitive flexibility is defined as one's being aware of alternatives, adapting to new situations and feeling competent (Martin &Anderson, 1998; Martin, Anderson & Thweatt, 1998; Martin & Rubin, 1995). It refers to the brain's ability to shift between different tasks or thought processes quickly and efficiently. It is the mental ability to adapt to new and changing situations, to think about multiple concepts simultaneously, and to shift one's focus of attention as needed.

One influential figure associated with the study of cognitive flexibility is Lev Vygotsky, a Russian psychologist. Vygotsky's work, particularly his theory of cognitive

development and the Zone of Proximal Development (ZPD), has contributed to the understanding of how individuals acquire and apply flexible cognitive skills.

Theories Associated with Cognitive Flexibility

The Cognitive Flexibility Theory. The theory was introduced by Spiro, Fetlovich, and Coulson (1998), is about how learning takes place in "complex" and "ill-structured domains". In essence, it's a theory that strives to determine how the human mind can obtain and manage knowledge and how it restructures our existing knowledge base, based on the new information received.

Set Shifting Theory. This theory was proposed by Grant and Berg (1948). This theory is often associated with the Wisconsin Card Sorting Task (WCST). It suggests that cognitive flexibility involves the ability to shift attention between different sets of rules or categories. Individuals must adapt their thinking and behaviour based on feedback, which requires them to switch between cognitive sets.

Dimensional Change Card Sort Test. Developed by Philip Zelazo (2006), this model suggests that cognitive flexibility involves the coordination and integration of multiple cognitive processes, including inhibitory control and working memory.

Dual Mechanisms of Cognitive Control Model. This model proposed by Todd S Baver (2012) states that cognitive flexibility is achieved through two distinct mechanisms: proactive control and reactive control. Proactive control involves sustained maintenance of task-relevant information, while reactive control is activated in response to unexpected events. The interplay between these mechanisms allows for adaptive cognitive flexibility.

Task Switching Model. The theory was proposed by Rubinstein, Meyer, and Evans (2001). This model emphasizes the role of task-switching as a fundamental aspect of cognitive flexibility. It suggests that individuals engage in cognitive control processes to switch between different tasks or cognitive sets.

Executive Function Framework. The theory was proposed by Miyake, Friedman, Emerson, Witzki, Howerter, and Wager (2000). Cognitive flexibility is considered one of the core components of executive functions Cognitive flexibility, along with working memory and inhibitory control, is often considered a key executive function.

Neurobiological Perspectives-Prefrontal cortex involvement. The theory was explained by Fuster, Miller, and Cohen (2001). Cognitive flexibility is associated with specific brain regions and neural networks. The prefrontal cortex, particularly the dorsolateral prefrontal cortex, is implicated in cognitive flexibility. The interaction between different brain regions, such as the prefrontal cortex and basal ganglia, is thought to be crucial for adaptive cognitive flexibility.

Factors Affecting Cognitive Flexibility

Neurobiological Factors. The prefrontal cortex and neurotransmitter dopamine play a crucial role. Neuroplasticity is fundamental to cognitive flexibility. (Cools, R., & D'Esposito, M, 2011)

Developmental Factors. Cognitive flexibility tends to improve with age, with continued development into adulthood (Kray J, & Lindenberger U, 2000)**.** Childhood experiences, including exposure to diverse stimuli and cognitive challenges, can influence the development of cognitive flexibility. (Diamond A, 2013)

Cognitive Factors. Metacognition and executive functions can influence the ability to flexibly adapt thinking. (Diamond A, 2013)

Environmental Factors. Cultural backgrounds can shape cognitive processes and influence the extent to which individuals exhibit cognitive flexibility. (Nisbett, R. E., & Miyamoto Y, 2005)**.** Exposure to diverse educational experiences and problem-solving situations can enhance cognitive flexibility. (Blair C, 2002)

Individuals with a higher level of openness are often more open-minded, curious, and willing to consider alternative perspectives, contributing to cognitive flexibility. Having a supportive social network and observing and learning from others in social contexts can contribute to the development of cognitive flexibility. (McCrae, R. R., & Costa, P. T, 1997). Other factors like chronic stress may negatively impact cognitive flexibility. Task structure and task complexity More complex tasks may demand greater adaptability. (Liston, C., McEwen, B. S., & Casey, B. J., 2009)

Types of Cognitive Flexibility

Shifting Flexibility. The ability to overcome perseveration by switching from an active neural pattern representing a certain cognitive set to a new one. (Market S,2011)

Spreading Flexibility. The ability to identify related alternative cognitive sets based on the spread of activation to nearby neural patterns. (Koslov S,2019)

Rule-based Flexibility. It involves adapting to changing tasks based on predefined rules. (Deak G, 2015)

Inductive Flexibility. It involves adapting to changing tasks based on knowledge and reasoning. (Murray J,1981)

Statement of the Problem

The study investigates the relationship between professional quality of life and cognitive flexibility in doctors.

Rationale of the Study

Cognitive flexibility is a dynamic ability required in doctors and there is importance for the professional quality of life (POQL) in the mental well-being of doctors. Cognitive flexibility is an important skill set required by doctors which will affect the patient care and efficiency

of healthcare systems. Compassion satisfaction is important for the well-being of doctors. Concerns such as burnout and secondary traumatic stress are addressed in the study and the relationship of these factors with cognitive flexibility in doctors. Doctors are a population who are trained and expected to be emotionally resilient because of this the mental health of doctors is not given enough concern. Doctors are also biased toward expressing their mental difficulties as they would be stigmatized and that would affect their career. This could be a probable reason the relationship between these variables has not been extensively studied before. Diminished cognitive flexibility will lead to reduced work efficiency and performance, improper communication and decision-making, diagnostic errors, and interfere with their coordination and execution while doing clinical procedures. By understanding the relationship between professional quality of life (compassion satisfaction, compassion fatigue, burnout, and secondary traumatic stress) and cognitive flexibility, adequate strategies can be taken to support doctors in managing their workload effectively.

CHAPTER II

REVIEW OF LITERATURE

A literature review discusses published information in a particular subject area, and sometimes information in a particular subject area within a certain time. A literature review can be just a simple summary of the sources, but it usually has an organizational pattern and combines both summary and synthesis.

Farahani M F, Jaberi K, and Purfarzad Z (2023) researched 'Workplace Spirituality, Compassion Satisfaction, Burnout, and Secondary Traumatic Stress: A Cross-Sectional Study in Iranian Nurses'. The article was published in Perspectives of Psychiatric Care. 295 nurses working in five hospitals affiliated with the Arak University of Medical Sciences, Iran participated in the study. Pearson's correlation coefficient and multiple regression were performed. Positive workplace spirituality leads to improved compassion satisfaction and low burnout. Findings also support the conclusion that female nurses had a higher compassion satisfaction than male nurses.

Car B, Guler H, Sural V, and Tor H (2022) conducted a study on 'Cognitive Flexibility, Emotional Intelligence, and Coping Strategies' and published the article in the Cypriot Journal of Educational Sciences. 475 high school students from Sincan district of Ankara province participated in the study and data of 460 were used. The survey model among quantitative research methods was used in this research. Independent t-test, one-way variant analysis (ANOVA), Pearson correlation coefficient, and linear regression were used. The study concludes that there is a positive and significant relationship between cognitive flexibility and emotional intelligence of high school students and a negative and nonsignificant relationship with coping strategies.

Sankruthyayana R G, Patangia B, Chaudhary S and Ghosh A. (2022) published a study on 'Personality, Cognitive Flexibility, and Motivation among Medical Professionals during COVID-19 Pandemic: A Correlational Study' in Managers Journal on Nursing. 204

medical professionals who are working as frontline workers in COVID-19 facilities in the Indian sub-continent. 103 doctors and 101 nurses are taken. Correlation and Mann-Whitney U tests were done. The study does partially support a significant relationship between certain personality factors, motivation, and cognitive flexibility. there are no significant differences between doctors and nurses in terms of their personality factors, cognitive flexibility, and motivation, except with respect to Neuroticism.

Garner E, Moghaddam G, and Farrel R S (2022) studied 'Psychological Flexibility as a Predictor of Professional Quality of Life in Newly Qualified Psychological Therapy Practitioners'. The article was published in the Journal of Contextual Behavioral Sciences. 56 trainee psychological therapy practitioners participated in the study. Multilevel modeling, ANOVA, and correlation were used to examine the relation. The impact of COVID-19 in the study was also explained. Findings suggest that higher baseline levels of psychological flexibility would predict higher levels of compassion satisfaction and lower levels of compassion fatigue.

Azizkhani R, Heydari F, Sadeghi A, AhmadiO, and Meibody A A (2022) studied 'Professional quality of life and emotional well-being among healthcare workers during the COVID-19 pandemic in Iran' and published the article in Frontiers in Emergency Medicine. 705 healthcare workers who had worked for more than 1 year in hospitals in Iran and had direct contact with COVID-19 patients in the past 6 months were included in the study. Correlation, regression, independent sample t-test, and analysis of variance (ANOVA) were performed. Iranian healthcare workers reported having moderate or high levels of compassion satisfaction and a moderate level of both compassion fatigue and burnout. The correlation coefficient showed that emotional well-being had a direct correlation with compassion satisfaction and compassion fatigue.

Madvari R F, khvidi M J, Shouroki F K, Sefidkar R, Babaee F, Bagheshahi M, and Nodoushan M F (2022) investigated ‘Corona disease anxiety in nurses and its relationship with cognitive flexibility; A case study’ and published the article in Archives of Occupational Health. 100 nurses from a hospital under the age of 50 participated in the study. Mann-Whitney, Kruskal-Wallis, independent sample t-test, one-way ANOVA, and correlation were performed. The study concluded that cognitive flexibility had no significant effect on Coronavirus disease anxiety.

Uhling L, Korunka C, Prem R, and Kubeick B (2022) published an article in IAAP on ‘A two-way study on the effect of cognitive demands of flexible work on cognitive flexibility, work engagement, and fatigue’.The sample comprised of 660 employees working at the headquarters of a large company in the logistics sector. Structural equation modeling, chi-square test, comparative-fit indices (CFI), Tucker–Lewis’s index (TLI), and root mean square error of approximation (RMSEA) were used to test the hypotheses. The cognitive demands of flexible work were only associated with beneficial outcomes. Planning of working time and planning of working places were related to increases in cognitive flexibility, suggesting that flexible work environments can be beneficial for the personal development of employees.

Orakcı S (2021) published an article in Thinking skillss and Creativity on ‘Exploring the relationships between cognitive flexibility, learner autonomy, and reflective thinking’. The study group consisted of 483 student teachers in three state universities in Turkey using convenience sampling. Pearson correlation and path analysis, ANOVA were done. Results of this study disclosed a significant positive correlation between participants’ learner autonomy and cognitive flexibility, indicating that the higher learner autonomy, the higher cognitive flexibility. The study found a significant positive correlation between participants’ learner autonomy and reflective thinking, indicating that the higher learner autonomy, the higher reflective thinking. The study also disclosed a significant positive correlation between

participants' reflective thinking and cognitive flexibility, indicating that the higher reflective thinking, the higher cognitive flexibility.

Yildiz-Akyol E Y and Boyacı M (2020) studied 'Cognitive Flexibility and Positivity as Predictors of Career Future in University Students' and published the article in the Turkish Psychological Counselling and Guidance Journal. The study designed for this purpose consists of 401 participants (290 female, 111 male) who attended two universities in Ankara and Istanbul. Pearson correlation was performed. The findings of this research demonstrated that there is a positive and significant relationship between career future, cognitive flexibility, and positivity. As a result of the analyses conducted to test the predictability of the career future by cognitive flexibility and positivity, they were found to be a significant predictor of the career future of university students.

Tore, Esra, Öge, and Mert R (2020) studied 'The relationship between leisure satisfaction and cognitive flexibility of school psychological counsellors '. The article was published in the International Journal of Eurasian Education & Culture. The research was carried out in public schools in the province of Istanbul in 2019. The study sample consists of 157 women and 146 men, in total 303 school counsellors. Research data were tested using a t-test, one-way analysis of variance (ANOVA), and correlation analysis. A highly significant positive correlation was found between cognitive flexibility and the leisure satisfaction of school counsellors.

Kent, William; Hochard, K D.; Hulbert-Williams, Nicholas J (2019) studied 'Perceived stress and professional quality of life in nursing staff and its importance with psychological flexibility'. The article was published in the Journal of Contextual Behavioral Science. The study explored how process measures related to Acceptance and Commitment Training (ACT) are associated with perceived stress and professional quality of life in nurses,

to guide intervention development. One-hundred and forty-two nurses were recruited from various specialties across four English National Health Service (NHS) Trusts. Correlation and regression models were used to analyse data. ACT framework provides a promising platform from which to develop nurse-focused stress-management interventions. Interventions focusing on acceptance, mindfulness, and values-linked processes may be most effective.

Ram D, Chandran S, Sadar A, and Gowdappa B (2019) studied 'Correlation of Cognitive Resilience, Cognitive Flexibility and Impulsivity in Attempted Suicide' and published the study in the Indian Journal of Psychological Medicine. Two hundred seventy subjects from the outpatient department of psychiatry in Jagadguru Sri Shivarathreeswara Medical College Hospital with suicide attempts were assessed. Descriptive statistics and a linear regression model were the methods used. In attempted suicide, cognitive flexibility and resilience are interrelated positively and inversely associated with impulsivity (nonplanning and inattention).

Aslan S (2018) conducted a study on 'Examination of Cognitive Flexibility Levels of Young Individual and Team Sport Athletes' and published the article in the Journal of Education and Training Studies. The study included a total of 237 volunteer athletes, comprising 140 males and 97 females from Turkey. For comparisons of the data of team and individual sports athletes, the Mann-Whitney U test and Chi-square test were applied. The results indicated that the cognitive flexibility levels of team athletes are higher than those of individual athletes.

Mason H D (2018) studied 'The Relationship between Existential Attitudes and Professional Quality of Life among Nursing Students' and published the article in the Journal of Psychology of Africa. The participants were 150 students who were all enrolled in a Nursing Science course at a South African university. The data were analyzed using the

Pearson product-moment correlation and multiple regression analysis. Findings suggest that existential attitudes are an essential personal resource that could serve as a potential buffer against compassion fatigue and burnout while enhancing compassion satisfaction.

Itzhaki M, BluvsteinI I, Bortz A P, Kostistky H, Noy D B, Filshtinsky V, and Theilla M (2018) researched 'Mental Health Nurse's Exposure to Workplace Violence Leads to Job Stress, Which Leads to Reduced Professional Quality of Life'. The article was published in Frontiers in Psychiatry. 230 mental health nurses from a large mental health center in Israel participated in the study. Pearson correlation coefficients were performed to examine the relationships between study variables, t-tests were used to examine differences between dichotomous groups, and multiple linear regression analyses were performed. Despite the high prevalence of physical and/or verbal violence directed toward them, the ProQOL of mental health nurses is more affected by work stress than by WPC. However, exposure to violence increases work stress and, thus, there is an indirect relationship between workplace violence and ProQOL through work stress.

Ali Zakeri M, Bazmandegan G, Ganjeh H, Zakeri M, Mollaahmadi S, Anbariyan A, and Kamiab Z (2020) studied 'Is nurses clinical competence associated with their compassion satisfaction, burnout, and secondary traumatic stress? A cross-sectional study'. The article was published in Nursing Open. 291 nurses working in public hospitals in south Iran (Rafsanjan) participated in the study. Bivariate correlations and regression analyses were used to examine the relationships between the variables. A significant positive relationship was observed between compassion satisfaction and clinical competence. A significant negative association was found between compassion satisfaction and secondary traumatic stress/burnout and also between secondary traumatic stress and clinical competence.

El-ShafeiD.A, Amira E, Abdelsalam, Hammam R, and Elgohary H (2018) published ‘Professional Quality of Life, Wellness Education, and Coping Strategies among Emergency Physicians’ in Springer Nature Germany. A stratified random sample of 108 EM physicians was selected from those who were working at the Emergency medicine department at the Zagazig University hospitals for at least one year at the time of the study. Physicians were grouped into two strata according to their specialty as surgical & non-surgical. Student’s t-test and one-way analysis of variance test (ANOVA), Pearson’s correlation coefficient, multiple regression analysis, McNemar’s test, and paired t-test were used to compare between pre-test and post-test results. The results indicate CS was higher among the older age group, smokers, nighttime sleepers, and hobby practitioners. Coping strategies are carried out by EM physicians to overcome stress and their ProQOL scores were improved significantly post-program.

Galiana L, Arena F, Oliver A, Sanso N, and Benito E studied (2017) ‘Compassion Satisfaction, Compassion Fatigue, and Burnout in Spain and Brazil: ProQOL Validation and Cross-cultural Diagnosis’ and published the article in the Journal of Pain and Symptom Management. 161 Brazilian palliative care professionals and 385 Spanish participated in this study. Two surveys with a cross-sectional design were carried out. Confirmatory factor analyses were done to study the factorial structure and a chi-square test was done for comparison. Spanish and Brazilian palliative care professionals showed high levels of compassion satisfaction (especially, for the Brazilian samples), medium levels of secondary traumatic stress, and low levels of burnout. Statistically significant differences in Spanish and Brazilian levels of compassion satisfaction and secondary traumatic stress were found, but not in burnout.

Cragun,J.N.,CPT Michael D.,& Thaxton,R.E (2016) studied ‘The Impact of Combat Deployment on Health Care Provider Burnout in a Military Emergency Department: A Cross-Sectional Professional Quality of Life Scale V Survey Study’ and published the article in Military Medicine .105 respondents completed the survey. The respondents worked in the emergency medicine department of San Antonia Military Medical Centre. Pearson correlation and multiple regression analysis were performed. There was no association between previous combat deployment and emergency department provider burnout, secondary traumatic stress, or compassion satisfaction scores.

Önen A S and Koçak C (2014) studied ‘The effect of cognitive flexibility on higher school students' study strategies. The article was published in the Procedia Social and Behavioural Sciences Journal. The sample of study consists of 554 students studying in grades 9,10,11. The data had been collected using quantitative methods and for analysis, the Pearson correlation coefficient was used. It was found in the study that there is a significant relationship between students’ cognitive flexibility levels and their attitudes towards studying.

CHAPTER III

METHODS

Aim

The aim of the study is to find out the effect of Professional Quality of Life on Cognitive Flexibility among Doctors (Allopathy).

Objectives

- To assess the relationship between compassion satisfaction and cognitive flexibility among doctors.
- To assess the relationship between compassion fatigue and cognitive flexibility among doctors.
- To assess the relationship between burnout and cognitive flexibility among doctors.
- To assess the relationship between secondary traumatic stress and cognitive flexibility among doctors.

Hypotheses

H1: Relationship between compassion satisfaction and cognitive flexibility among doctors

H2: Relationship between compassion fatigue and cognitive flexibility among doctors

H3: Relationship between burnout and cognitive flexibility among doctors

H4: Relationship between secondary traumatic stress and cognitive flexibility among doctors.

Operational Definition of the Variables

Professional quality of life is defined as the quality one person feels in relation to their work as a helper. (Stamm,2010)

Compassion satisfaction (CS) is defined as the amount of pleasure derived from helping others. (Stamm, 2005)

Compassion fatigue is the deep physical, emotional, and spiritual exhaustion that can result from working day to day in an intense caregiving environment. (Figley)

Burnout is often associated with stressful work and stressful experiences in a work setting (Stamm, 2010). Burnout happens from the stress that builds up gradually over time. (i.e., individuals may feel it coming on; Figley, 2002; Gentry, 2002; Stamm, 2010)

Secondary traumatic stress: is the psychological distress that arises from indirect exposure to the trauma experienced by others. (Figley)

Cognitive flexibility, defined as the ability to generate diverse explanations and solutions for life's challenges (Dennis & Vander Wal, 2010), equips individuals with enhanced problem-solving skills, especially in the face of adversity.

Research Design

Correlational and regression design is a type of nonexperimental research that facilitates the prediction and explanation of the relationship among variables. (Sreeram E,2019)

Pearson correlation coefficient

$$r = \frac{n(\Sigma xy) - (\Sigma x)(\Sigma y)}{\sqrt{[\, n\Sigma x^2 - (\Sigma x)^2 \,][\, n\Sigma y^2 - (\Sigma y)^2 \,]}}$$

Regression is a statistical method used in finance, investing, and other disciplines that attempts to determine the strength and character of the relationship between one dependent variable and a series of independent variables (Brian Beers,2024).

Sample and Sample Size

A sample of a hundred practicing doctors was taken as the sample.

Sampling Design

Convenient sampling was used to collect the sample. Convenient sampling allows researcher to select participants who are readily available and accessible. Allopathy Doctors of various specialties and settings is considered to ensure a diverse representation of the medical profession.

Inclusion Criteria

- Participants must be licensed medical doctors (Allopathy) actively practicing medicine in their respective fields.
- Participants should have a minimum of one year of clinical experience.

Exclusion Criteria

- Individuals who are currently on long leave or not actively practicing.
- Individuals working in healthcare but not holding medical degree.

Tools Used for Data Collection

To measure Professional quality of life: Professional Quality of Life Measure version 5(Pro QOL-5)

The Professional Quality of Life (ProQOL) questionnaire was introduced by psychologists Beth Hudnall Stamm and Charles R. Figley. It was developed as a tool to measure the quality of life of individuals who work in professions dealing with trauma and suffering, such as healthcare professionals, social workers, emergency responders, and therapists. This version was developed in 2009. This is a closed-ended and self-administered

questionnaire (David Heagarty,2021). There are 30 items in ProQOL-5 with a 5-point Likert scale with 5 being ‘very often’ to 1 as ‘never’. Five items are reverse-scored. ProQOL-5 comprises three subscales: Compassion satisfaction, burnout, and secondary traumatic stress. The average score for each subscale is 50. There is high reliability (Cronbach’s alpha 0.81).

To measure cognitive flexibility: Cognitive Flexibility Inventory (CFI)

It was introduced by Dennis and Vander Wal in 2010. The cognitive flexibility inventory (CFI) was developed to be a brief self-report measure of the type of cognitive flexibility necessary for individuals to successfully challenge and replace maladaptive thoughts with more balanced and adaptive thinking (Dennis and Vander Wall,2010). It is a 20-item self-report measure with a 7-point Likert scale with 7 being ‘strongly agree’ to 1 as ‘strongly disagree’. Six items are reverse-scored. High test-retest reliability (Cronbach’s alpha 0.9). The CFI measures two aspects of cognitive flexibility: alternatives and control.

Procedure

First, the questionnaires for the professional quality of life scale and cognitive flexibility inventory scale and a form to fill in sociodemographic details were prepared. The data was collected by going to doctors within the district in person and questionnaires were given to those who were willing to take part in the study. The doctors were requested to fill out the form and mark their responses in the questionnaires. After data collection, the data was entered into SPSS software to perform further analysis. Through the SPSS software, the normality of the data was determined to select the test for correlation study. Spearman rank correlation coefficient was used to analyse correlation as the data was not normally distributed. Linear regression was performed to estimate the relationship between compassion satisfaction and cognitive flexibility.

Ethical Considerations

- Consent of the participants was obtained prior to the study.
- Adequate level of confidentiality of participants information was maintained.
- Participants were treated with respect for their autonomy and dignity.
- Transparency was upheld in all forms of communication regarding the study.

Statistical Analysis Technique

SPSS or Statistical Package for the Social Sciences was used for data analysis. Kolmogorov-Smirnov was used to check the normality. Correlation is a statistical measurement to find the correlation between variables. Linear regression analysis is used to establish the predictive power of the variables. The variable that is to be predicted is the dependent variable (cognitive flexibility) and the variable that is used to predict is the independent variable (ProQOL).

Normality Testing

Table 1

Test for Normality-Kolmogorov-Smirnov test

	Sig
Compassion Satisfaction	.54
Compassion Fatigue	.011
Secondary Traumatic Stress	.005
Burnout	.001
Cognitive Flexibility	.200

*There is a lower bound of significance

The sample size is 100 hence, the Kolmogorov-Smirnov test was used. On testing normality, it indicates the significance of compassion satisfaction is .54, compassion fatigue is .011, secondary traumatic stress is .005, burnout is .001, and cognitive flexibility is .200. As the level of significance under the Kolmogorov-Smirnov column is less than 0.05 for three variables, it can be concluded that the variables are not normally distributed. Hence non-parametric tests were performed and Spearman correlation was performed.

CHAPTER IV

RESULT AND DISCUSSION

The study aimed to understand the relationship between professional quality of life and cognitive flexibility among doctors. The independent variables considered are compassion satisfaction, compassion fatigue, secondary traumatic stress, burnout, and its relation with the dependent variable cognitive flexibility among a sample of 100 doctors. A hundred doctors participated in the study, out of which forty were male and sixty were female. Seventy-five participants completed postgraduate studies and twenty-five participants had completed undergraduate studies. Among the hundred participants, seventy-four worked in the private sector which included private hospitals and clinics. Twenty-six of the participants worked in the public sector which included central and state government hospitals.

Table 2

Descriptive statistics of the dimensions of Professional Quality of Life and Cognitive Flexibility

Deviation	N	Mean	Std
Compassion Satisfaction	100	39.02	5.554
Compassion Fatigue	100	46.4	8.822
Burnout	100	22.49	5.026
Secondary Traumatic Stress	100	23.91	4.989
Cognitive flexibility	100	105.33	13.923

Here, the mean is the average value of the data set and represents the central tendency of the data. Std is the standard deviation which indicates the typical distance between each data point and the mean of the data set. N represents the sample size. The mean and standard

deviation of the components of professional quality of life and cognitive flexibility are shown in Table 2.

H1: Relationship between compassion satisfaction and cognitive flexibility among doctors

Table 3

Correlation between Compassion Satisfaction and Cognitive Flexibility

	Cognitive Flexibility
Compassion Satisfaction	.483

**Correlation is significant at the 0.01 level (2-tailed).

Table 3 shows Spearman's correlation between compassion satisfaction and cognitive flexibility in doctors. Since the correlation coefficient is positive it can be inferred that there is a positive relationship between compassion satisfaction and cognitive flexibility. The significance level(p-value) is indicated as "<.001", which means the correlation is statistically significant at $p < 0.01$, hence the hypothesis H1 is not rejected. Hence the result indicates a moderate positive correlation between compassion satisfaction and cognitive flexibility. This means that as compassion satisfaction increases, cognitive flexibility tends to increase moderately.

H2: Relationship between compassion fatigue and cognitive flexibility among doctors

Table 4

Correlation between Compassion Fatigue and Cognitive Flexibility

	Cognitive Flexibility
Compassion Fatigue	-.374

**Correlation is significant at the 0.01 level (2-tailed).

Table 4 shows Spearman's correlation between compassion fatigue and cognitive flexibility in doctors. Since the correlation coefficient is negative it can be concluded that there is a negative relationship between compassion fatigue and cognitive flexibility. The significance level(p-value) is indicated as "<.001", which means the correlation is statistically significant at $p < 0.01$, hence hypothesis H2 is not rejected. Hence the result indicates a weak negative correlation between compassion fatigue and cognitive flexibility. This means that as compassion fatigue increases, cognitive flexibility tends to decrease slightly.

H3: Relationship between burnout and cognitive flexibility among doctors

Table 5

Correlation between Burnout and Cognitive flexibility

	Cognitive Flexibility
Burnout	-.437

**Correlation is significant at the 0.01 level (2-tailed).

Table 5 shows Spearman's correlation between burnout and cognitive flexibility in doctors. Since the correlation coefficient is negative it can be inferred that there is a negative relationship between burnout and cognitive flexibility. The significance level(p-value) is indicated as "<.001", which means the correlation is statistically significant at $p < 0.01$, hence the hypothesis H3 is not rejected. Hence the result indicates a moderate negative correlation between burnout and cognitive flexibility. This means that as burnout increases, cognitive flexibility tends to decrease moderately.

A study conducted by A Eskildsen, LP Andersen, AD Pedersen, SK Vandborg, and JH Andersen(2015) indicates, the negative associations between burnout and cognitive functioning, with executive functioning deficits being the most prominent ones. Executive

functions are high-order cognitive functions and they include cognitive skills such as inhibition, switching (or cognitive flexibility), planning, reasoning, and problem-solving.

H4: Relationship between secondary traumatic stress and cognitive flexibility among doctors

Table 6

Correlation between Secondary Traumatic Stress and Cognitive Flexibility

	Cognitive Flexibility
Secondary Traumatic Stress	-.219

*Correlation is significant at the 0.05 level (2-tailed).

Table 6 shows Spearman's correlation between secondary traumatic stress and cognitive flexibility in doctors. Since the correlation coefficient is negative it can be inferred that there is a negative relationship between secondary traumatic stress and cognitive flexibility. The significance level(p-value) is indicated as "0.028", which means the correlation is statistically significant at $p < 0.05$, hence the hypothesis H4 is not rejected. Hence the result indicates a weak negative correlation between secondary traumatic stress and cognitive flexibility. This means that as secondary traumatic stress increases, cognitive flexibility tends to decrease slightly.

Table 7

Regression Analysis of Compassion Satisfaction and Cognitive Flexibility

Model	R	R Square	Adjusted R Square	Std Error of the Estimate	Sig
1.	.483	.235	.228	.613	<.001

Table 7 shows the regression analysis of compassion satisfaction and cognitive flexibility. The R-value indicates a moderate positive linear relationship between compassion

satisfaction and cognitive flexibility. R square value is 23.5%, which indicates that 23.5% of the total variation in the dependent variable, cognitive flexibility, can be explained by the independent variable, compassion satisfaction, which is very small. Adjusted R Square is 0.228, which means after adjusting the compassion satisfaction, 22.8% of the variability in cognitive flexibility is explained by the compassion satisfaction. The relationship between compassion satisfaction faction and cognitive flexibility is statistically significant (p<.001).

Table 8

Regression Analysis of Burnout and Cognitive Flexibility

Model	R	R Square	Adjusted R Square	Std. Error of the estimate	sig
1.	-.437	.183	.174	.634	<.001

Table 8 shows the regression analysis of burnout and cognitive flexibility. R-value indicates a moderate negative linear relationship between burnout and cognitive flexibility. R square value is approximately 18.3%, which indicates that 18.3% of the total variation in the dependent variable, cognitive flexibility, can be explained by the independent variable, burnout, which is very small. Adjusted R Square is 0.174, which means after adjusting the burnout, 17.4% of the variability in cognitive flexibility is explained by the burnout. The relationship between burnout and cognitive flexibility is statistically significant (p<.001).

From the analysis performed it can be inferred that with an increase in compassion satisfaction cognitive flexibility increases among doctors and with an increase in compassion fatigue cognitive flexibility decreases among doctors. Burnout has a more significant effect on cognitive flexibility as compared to secondary traumatic stress among doctors.

CHAPTER V

CONCLUSION

In conclusion, by investigating the relationship between professional quality of life and cognitive flexibility among doctors addresses concern for healthcare professionals. Doctors have to navigate complex emotional and cognitive challenges that are inherent in their roles. A high level of compassion satisfaction contributes to better well-being and increased cognitive flexibility. Compassion fatigue leads to decreased cognitive flexibility in doctors. Among the components of compassion fatigue, burnout has a more significant negative relationship with cognitive flexibility as compared to secondary traumatic stress. Even though doctors are trained to face these challenges, professional quality of life may have a moderate effect on cognitive flexibility. By focusing on improving the mental health of doctors and better management of workload, the efficiency of patient care and healthcare systems can be improved.

Findings

- Moderate positive relationship between compassion satisfaction and cognitive flexibility among doctors.
- Weak negative relationship between compassion fatigue and cognitive flexibility among doctors.
- Moderate negative relationship between burnout and cognitive flexibility among doctors.
- Weak negative relationship between secondary traumatic stress and cognitive flexibility among doctors.
- Burnout has a more significant effect than secondary traumatic stress on cognitive flexibility among doctors.

Limitations

- Measures can be subjective and prone to biases such as social desirability bias, where participants may provide responses, they believe are socially acceptable rather than reflecting their true experiences.
- Differences in the specialization and work setting of the doctors can impact the results. There are participants from government and private work settings who can have a considerable difference in their work culture and this needs to be further analysed through a comparative study.
- Confounding variables such as organizational culture and personal factors may confound the result if not controlled

Implications

- The study promotes the mental well-being of doctors and that can be improved through mindfulness, maintaining healthy professional boundaries, and engaging in self-care activities.
- By focussing on improving cognitive flexibility, improper communication and decision making, diagnostic errors and interference with their coordination and execution while doing clinical procedures could be prevented
- Secondary traumatic stress can be improved through resilience training and education. Compassion fatigue and burnout can be reduced and compassion satisfaction can be improved through workload management, promoting work-life balance, creating a supportive work environment through a culture that values open communication, mutual respect, appreciation and recognition of the efforts, and encouraging peer support.

- In Future studies, a comparative study based on doctors working in different specializations and work settings could be analysed.

The research concluded that there is a moderate positive relationship between compassion satisfaction and cognitive flexibility and there is a weak negative correlation between compassion fatigue and cognitive flexibility among doctors. Higher levels of compassion satisfaction and cognitive flexibility will lead to better patient care and health outcomes and that will lead to better patient satisfaction. The overall effectiveness and efficiency of healthcare systems will improve.

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APPENDICES

Appendix A

Informed Consent

The study is being conducted to study “The Relationship between Professional Quality of Life and Cognitive Flexibility in Doctors (Allopathy)”. Your participation in this study is completely voluntary and there are no foreseen risks associated with this study. All the information collected will be kept confidential and the data will be used for academic purposes only. Please feel free to answer the questions honestly and openly as your responses will be kept anonymous. Kindly fill out the form if you are a licensed medical practitioner actively practicing with a minimum of one year of clinical experience. Those who are currently on long leave please refrain from attempting the questionnaires. Please feel free to answer the questions honestly and openly as your responses.

Thank you in advance

Appendix B

Sociodemographic Details

Name (in initials):

Age:

Gender:

Education (UG/PG):

Specialization:

Years of service:

Work setting:

Appendix C

Professional Quality of Life Scale (PRoQOL)

Compassion Satisfaction and Fatigue

(ProQOL) Version 5(2009)

When you [help] people you have direct contact with their lives. As you may have found, your compassion for those you [help] can affect you in positive and negative ways. Below are some questions about your experiences, both positive and negative, as a [helper]. Consider each of the following questions about you and your current work situation. Select the number that honestly reflects how frequently you experienced these things in the last 30 days.

1=Never

2=Rarely

3=Sometimes

4=Often

5=Very Often

1. I am happy.

2. I am preoccupied with more than one person I (help).

3. I get satisfaction from being able to (help) people.

4. I feel connected to others.

5. I jump or am startled by unexpected sounds.

6. I feel invigorated after working with those I (help).

7. I find it difficult to separate my personal life from my life as a (helper).

8. I am not as productive at work because I am losing sleep over traumatic experiences of a person I (help)

9. I think that I might have been affected by the traumatic stress of those I (help).

10. I feel trapped by my job as a (helper).

11. Because of my (helping), I have felt "on edge" about various things.

12. I like my work as a (helper).

13. I feel depressed because of the traumatic experiences of the people I (help).

14. I feel as though I am experiencing the trauma of someone I have (helped).

15. I have beliefs that sustain me.

16. I am pleased with how I am able to keep up with (helping)techniques and protocols.

17. I am the person I always wanted to be.

18. My work makes me feel satisfied.

19. I feel worn out because of my work as a (helper).

20. I have happy thoughts and feelings about those I (help) and how I could help them.

21. I feel overwhelmed because my case (work) load seems endless.

22. I believe I can make a difference through my work.

23. I avoid certain activities or situations because they remind me of frightening experiences of the people I (help).

24. I am proud of what I can do to (help).

25. As a result of my (helping), I have intrusive, frightening thoughts.

26. I feel "bogged down" by the system.

27. I have thoughts that I am a "success" as a (helper).

28. I can't recall important parts of my work with trauma victims.

29. I am a very caring person.

30. I am happy that I chose to do this work.

Appendix D

Cognitive Flexibility Inventory (CFI)

Please use the scale below to indicate the extent to which you agree or disagree with the following statements.

1=Strongly Disagree

2=Disagree

3=Somewhat Disagree

4=Neutral

5=Somewhat Agree

6=Agree

7=Strongly Agree

1. I am good at ‘‘sizing up’’ situations

2. I have a hard time making decisions when faced with difficult situations

3. I consider multiple options before making a decision

4. When I encounter difficult situations, I feel like I am losing control

5. I like to look at difficult situations from many different angles

6. I seek additional information not immediately available before attributing causes to behaviour

7. When encountering difficult situations, I become so stressed that I can not think of a way to resolve the situation

8. I try to think about things from another person's point of view

9. I find it troublesome that there are so many different ways to deal with difficult situations

10. I am good at putting myself in others' shoes

11. When I encounter difficult situations, I just don't know what to do

12. It is important to look at difficult situations from many angles

13. When in difficult situations, I consider multiple options before deciding how to behave

14. I often look at a situation from different view-points

15. I am capable of overcoming the difficulties in life that I face

16. I consider all the available facts and information when attributing causes to behaviour

17. I feel I have no power to change things in difficult situations

18. When I encounter difficult situations, I stop and try to think of several ways to resolve it

19. I can think of more than one way to resolve a difficult situation I'm confronted with

20. I consider multiple options before responding to difficult situations