The Impact of Personal Injury Motor Vehicle Incidents: The Development of Adverse Stress Reactions

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Abstract

As a result of primary health care reforms, the profession of social work has been afforded the opportunity to engage with individuals and families in various primary health care settings, including local hospitals. Social work professionals perform a range of distinct and important roles when working in hospitals. This is particularly evident when engaging in social work practice in the emergency room and intensive care unit. Crisis intervention represents merely one role that social workers must undertake in the emergency room and intensive care unit. However, this role is of importance, especially when working with individuals involved in personal injury motor vehicle incidents. This practicum report will briefly discuss the impact of primary health care reforms on the profession of social work and the roles that social workers engage in when working in primary health care settings. There will also be a brief discussion focusing on crisis intervention and personal injury motor vehicle incidents. This report will also briefly examine the practical experience of a Master of Social Work student working in a primary health care setting and the research completed focusing on personal injury motor vehicle incidents and the development of adverse stress reactions.

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Introduction

Canada's health care system is an instrumental element of the country's social service programming (Lewis, Donaldson, Mitton, & Currie, 2001). The Canada Health Act was enacted in 1984 and focused on the principle of universal access to health care for all Canadians. However, the health care system has developed and evolved significantly since its original inception and now encompasses much more than universal access to hospital and physician services which was the original focus of policy makers and legislators. With the introduction of primary health care reforms, the Canadian health care system now encompasses universal access to multidisciplinary health care professionals and offers improved access to health care services in non traditional settings and locations (Frankish, Moulton, Rootman, Cole, & Gray, 2006). As a result, other professionals and paraprofessionals have been offered the opportunity to engage with individuals and families in new and exciting ways within a health care setting. This opportunity has extended to the profession of social work.

The primary focus of social work practice is the improvement of health and social wellbeing of individuals, families, and communities (Heinonen & Spearman, 2001). Social workers believe in the right to service, strive to achieve social justice, and endeavor to preserve the dignity and worth of the person through self determination and empowerment. Taking into consideration the focus and the

values and principles that social workers adhere to, specifically humanitarian and egalitarian ideals, the involvement of social workers in health care settings seems appropriate. They strive to work with individuals, families, and communities to assess, resolve, prevent, or lessen the impact of psychological, social, physical, and mental health related issues (Canadian Association of Social Work, 2003). The ensuing result is the achievement of increased health and social wellbeing through the wealth of services provided by social workers. Services can include but are not limited to counseling and crisis intervention, community development and capacity building, discharge planning, advocacy and liaison, information and referral, and assisting individuals and families obtain basic human needs (Ruster, 1995).

This practicum report will provide a brief overview of the literature focusing on primary health care in Canada, social work and primary health care, and the competencies and roles of social work in primary health care settings. This practicum report will go on to provide a brief overview of the literature focusing on crises resulting from involvement in a personal injury motor vehicle incident, along with literature focusing on adverse stress reactions and the symptoms and consequences of Post Traumatic Stress Disorder. This report will also provide a description of the practicum placement at the Quick Response Program at the Prince George Regional Hospital and present detailed information on the practicum

learning objectives achieved. This will include a brief description of the research that was completed during the course of the practicum placement.

Chapter One: Literature Review

Primary Health Care in Canada

Primary health care has been defined as "the care provided at the first level of contact with the health care system, the point at which health services are mobilized and coordinated to promote health, prevent illness, care for common illness, and manage health problems" (National Forum of Health, 1998 as cited in Frankish et al., 2006). It is at this point of contact that individuals, families, and communities are provided with a range of health care services, which includes services provided by general practitioners and family physicians as well as a range of health and social services that are provided by other professionals and paraprofessionals (Canadian Association of Social Work, 2003; Frankish et al., 2006; Hills & Mullett, 2005). This represents a departure from the traditional health care system which focused predominantly on hospitals and medical treatments (Romanow & Marchildon, 2004). It also represents a departure from the traditional obstacles found between health care professionals as they work collaboratively and in partnership to prevent illness and injury and improve health (Bauer, Batson, Hayden, & Counts, 2005; Canadian Association of Social Work, 2003; Hills & Mullett, 2005).

Primary health care builds on many of the traditional principles found in the Canadian health care system. The Canadian health care system is rooted in the principles of universality, accessibility, comprehensiveness, portability, and public

administration (Health Canada, 1984; Heinonen & Spearman, 2001). These principles work to address concerns related to universal access to medical care, geographically and financially accessible health care, comprehensive coverage of medical services, portability of medical care from province to province, and the public administration of a non-profit health care system. Primary health care is also focused on accessibility. However, primary health care takes the principle of accessibility a step further than the traditional health care system. It encourages accessibility that takes into consideration physical, social, cultural, and other barriers to health care in addition to financial and geographical obstacles (Hills & Mullett, 2005). It also promotes increased access to health care services outside traditional "office hours" in order to provide additional options for individuals, families, and communities (Canadian Association of Social Work, 2003).

Primary health care also upholds the principles of participation, multidisciplinary integration, essentialism, and equitability which work to further the traditional principle of universality. Primary health care requires the participation of individuals, families, and communities in the development, coordination, implementation, and assessment of appropriate and effective health care services that takes into consideration the social determinants of health and addresses the inequities and barriers to health care that some community members encounter (Besner, 2004; Hills & Mullett, 2005). Primary health care also represents

a comprehensive approach to the delivery of health care services. Utilizing a multidisciplinary and integrated approach to service delivery provides an opportunity for professionals and paraprofessionals of differing disciplines to work together to develop inclusive and complete plans of care that address all of the determinants of health (Bauer et al., 2005; Hills & Mullett, 2005).

Primary health care also focuses on providing essential health care that takes into consideration the impact of social, political, and physical environments on health and social well being (Hills & Mullett, 2005). It takes into consideration the setting or location in which people live and permits the development and implementation of health care services that communities define as essential for the health and social wellbeing of their members (Hills & Mullett, 2005). Primary health care is also equitable and places emphasis on the social determinants of health such as income, social status, social supports, employment, education, food security, and housing. It aims to impede the unjust and imbalanced allocation of health care services and resources and create opportunities for social change that address the underlying factors that affect health (Besner, 2004; Hills & Mullett, 2005).

A primary health care approach facilitates the implementation of these five principles in conjunction with the traditional principles of the Canadian health care system. In a primary health care system, the principles of accessibility, participation, multidisciplinary integration, essentialism, and equitability work together with the

goal of improving the health and social wellbeing of individuals, families, and communities (Besner, 2004; Canadian Association of Social Work, 2003; Frankish et al., 2006; Hills & Mullett, 2005). However, this represents a complex and multifaceted challenge for those professionals and paraprofessionals involved in the delivery of health care services. In order to meet the requirements of a primary health care system, it is essential for professionals and paraprofessionals to collaborate and work in partnership (Canadian Association of Social Work 2003; Mullaly, 1988; Lesser, 2000). This necessitates that professionals and paraprofessionals learn the values, principles, and skills that each discipline or profession brings to the primary health care setting. Primary health care teams are also challenged to address physical, social, and economic factors that impact the health of individuals, families, and communities and respond effectively to the needs of the community that they serve (Canadian Association of Social Work, 2003). A primary health care approach also challenges health care professions to shift the focus of health care away from treating illness to a broader social health focus (Shapiro, Cartwright, & McDonald, 1994). The social work profession represents one of the many professional disciplines with the opportunity to undertake these challenges as they participate in the delivery of health care services.

Social Work in Primary Health Care

The profession of social work has a long and varied history, beginning in the early 1800s (Hick, 2002). It has developed and transformed from a volunteer based service that provided little more than moral advice to those living in poverty to professional services that work to not only provide basic services to individuals, families, and communities but also to address the larger societal problems that precipitate poverty (Hick, 2002). It is focused on philanthropic values that respect the inherent dignity of individuals, families, and communities and attempts to address the impacts of inequitable resources on members of society (Congress, 1999; Heinonen & Spearman, 2001). Social workers commit to a particular set of values including respect for worth and dignity of every person, the client's right to self-determination, confidentiality, advocacy, and social action (Congress, 1999; Heinonen & Spearman, 2001). These values, combined with the principles of human rights and social justice represent the fundamental components of social work and are employed by social workers with the goal of promoting social change, problem solving, and the empowerment and liberation of individuals, families, and communities (Congress, 1999; Heinonen & Spearman, 2001). It is through the promotion of social change, problem solving, and the empowerment and liberation of people that the health and social well being of people is enhanced. This process

can be undertaken and achieved in various settings and under various circumstances, including primary health care settings.

As previously noted, the principles of primary health care are accessibility, participation, multidisciplinary integration, essentialism, and equitability (Canadian Association of Social Work, 2003; Hills & Mullett, 2005). At the core of these principles is the requirement of health care professionals and paraprofessionals to take into consideration the social and economic environment that individuals, families, and communities live in when developing appropriate and effective health care strategies. Social workers take into consideration various theories in the implementation of their practice, including human behaviour and social systems theories (Heinonen & Spearman, 2001; Turner, 2002). However, the "person in environment" perspective with its focus on the interactions and interrelationships between people and their environment appears to be the ideal perspective when engaging in social work practice in a primary health care setting.

The "person in environment" perspective has been employed exhaustively in social work practice for an extensive period of time (Canadian Association of Social Work, 2003). It is derived from ecological theory and focuses on the interaction and the connections and interconnections between people and their environment (Derezotes, 2000; Heinonen & Spearman, 2001). In this context "person" refers to the physical and social development of individuals, families, and communities within

the framework of environmental pressures (Karls & Wandrei, 1992). "Environment" in a social work context refers to interrelated elements in society that either work to improve or hinder the physical and social development of individuals, families, and communities (Karls & Wandrei, 1992). The "person in environment" perspective emphasizes the principle that growth and development takes place within the context of relationships and that in order to facilitate meaningful change individuals must be assessed within the context of the family environment and the family must be understood within the context of its community and the larger society (Heinonen & Spearman, 2001; Kondrat, 2002). This perspective provides the underpinning for an understanding of how health and social well being are directly linked to the social and economic environments that individuals, families, and communities exist within and is directly linked to the requirements of primary health care and the principles it adheres to.

The "person in environment" perspective also works to address some of the challenges that professionals and paraprofessionals face when delivering health care services. Primary health care teams are challenged to address physical, social, and economic factors that impact on the health of individuals, families, and communities and respond effectively to the needs of the people that they serve (Canadian Association of Social Work, 2003). A primary health care approach also challenges health care professions to shift the focus of health care away from treating illness to

a broader social health focus (Shapiro, Cartwright, & MacDonald, 1994). The "person in environment" perspective has emerged as the principal approach to understanding individuals, families, and communities within an environmental context and how these environments impact on health and social wellbeing. This is a necessary component for the successful transformation of health care away from a treatment focus to a focus on prevention and the promotion of wellness (Canadian Association of Social Work, 2003). Primary health care offers the social work profession the opportunity to influence the development of health care services, focusing on the social and economic environment and the social determinants of health and social wellbeing through the lens of a "person in environment" perspective (Canadian Association of Social Work, 2003). However, there are specific competencies that are required of a social worker working within a primary health care setting in order for them to carry out this role.

Competencies and the Role of Social Work in Primary Health Care

In primary health care settings, social workers need to be capable of completing a wide range of duties and have the ability to assume various roles (Berkman, Gardner, Zodikoff, & Harootyan, 2005; Browne, Smith, Ewalt, & Walker, 1996; Canadian Association of Social Work, 2003; Greene & Kulper , 1990). This requires a strong foundation in generalist social work practice (Canadian Association of Social Work, 2003). Generalist social work is broad in scope and

provides an opportunity for social workers to engage with individuals, families, and communities and work through a host of issues and concerns, including but not limited to homelessness, sexual abuse, poverty, alcohol and substance misuse, and discrimination (Derezotes, 2000; Leslie & Cassano, 2003; Shatz, Jenkins, & Sheafor, 1990; Shorkey & Crocker, 1981). Utilizing biopsychosocial assessments, generalist social work practitioners work to develop and implement effective and useful interventions (Derezotes, 2000; Leslie & Cassano, 2003; Shatz, Jenkins, & Sheafor, 1990; Shorkey & Crocker, 1981). Generalist social workers use a generic set of assessment, planning, and intervention skills with the understanding that variations in practice are considered necessary and desirable depending on the issues or concerns being addressed (Derezotes, 2000; Leslie & Cassano, 2003; Shatz, Jenkins, & Sheafor, 1990; Shorkey & Crocker, 1981). This allows for creativity and flexibility, as generalist social workers work to develop and implement interventions that are appropriate and suitable to the individual and the situation at hand.

As previously noted, social workers in primary health care settings work with individuals, families, and communities that are in need of assistance in achieving health and social well being. They work to assess individual and family biopsychosocial functioning and intervene as necessary (Berkman, Chauncey, Holmes, Daniels, Bonander, Sampson, & Robinson, 1999; Greene & Kulper, 1990; Volland, Berkman, Phillips, & Stein, 2003). Biopsychosocial assessments represent

one of the roles of social workers in primary health care settings. They are completed with an individual, family, or community in order to determine their strengths and the weaknesses and to evaluate their current level of functioning (Berkman et al., 1999; Davis, Milosevic, Baldry, & Walsh, 2004). It is necessary that social workers assess people in relation to physical, environmental, behaviour, psychological, economic, and social factors in order to understand the individual as a whole person (Berkman et al., 1999; Turner, 2002; Van Hook, 2003). Some aspects can include pre-existing health or mental health concerns, evaluation of individual's informal support systems including family members and friends, review of client's needs, evaluation of environmental issues such as employment status, housing, and other basic needs, and spiritual and religious considerations (Marino, Weinman, & Soudelier, 2001). Based on the findings of the biopsychosocial assessment, an intervention strategy that addresses the issues at hand can be formulated and implemented (Heinonen & Spearman, 2001; Marino, Weinman, & Soudelier, 2001; Turner, 2002).

Interventions can include a host of different services such as linking individuals and families with available community resources and supports, providing therapeutic services, supportive counseling and grief counseling, completing discharge planning, helping an individual to expand and strengthen their network of social supports, or engaging in crisis intervention (Bauer et al., 2005;

Canadian Association of Social Work, 2003; Davis et al., 2004; Marino, Weinman, & Soudelier, 2001). Interventions represent another role of social workers working in primary health care settings. Social workers fulfilling the role of service provider or interventionist develop a service plan in consultation with the individual and their informal support system (Derezotes, 2000; Heinonen & Spearman, 2001; Turner, 2002). The service plan can include a number of different services and interventions and is individually based taking into consideration the strengths and needs of the person. The social worker is responsible for coordinating and documenting the development of the service plan with the individual's participation (Derezotes, 2000; Heinonen & Spearman, 2001; Turner, 2002). Ideally, the development of the service plan will include the involvement of other health care professionals and a general agreement on the roles or function that each profession will undertake in working with the individual (Davis et al., 2004).

Social workers provide information on resources, both formal and informal, available to the individual and provide the family with emotional support and education on skills and coping (Davis et al., 2004; Marino, Weinman, & Soudelier, 2001). Social workers have a unique and valuable role in primary health care as they provide information on community resources and supports to individuals and families (Davis et al., 2004; Marino, Weinman, & Soudelier, 2001). Appropriate referrals represent an important contribution to individual and family health and

social well being (Sands, 2000 as cited in Bentley, Walsh, & Farmer, 2005) and it has been suggested that prompt and timely referrals may even be connected to the prevention of unnecessary suffering for many clients (Ross & Hardy, 1999 as cited in Bentley, Walsh, & Farmer, 2005). Community resources such as support groups, education programs, and social support services can work to further improve the health and social well being of individuals and families and work to curtail further involvement in the health care system (Bauer et al., 2005; Berkman et al., 2005).

Social workers also provide counseling and therapeutic services. Counseling involves the development of a relationship between the social worker and an individual with the goal of increasing the individuals' ability to cope with the demands of life (Heinonen & Spearman, 2001; Shebib, 2003). Individuals are usually referred or seek out counseling when faced with a personal crisis that has become unmanageable (James & Gilliland, 2005). Social workers counsel clients in order to help them develop insight, problem solve, deal with emotional pain, or enhance relationships with the goal of improving overall health and social well being (Heinonen & Spearman, 2001; Shebib, 2003). They also work to provide information on available resources, coping strategies, and information and education to the individual with the goal of promoting positive change (Davis et al., 2004; Marino, Weinman, & Soudelier, 2001). It should be noted that in most cases counseling in primary health care is provided in conjunction with interventions that address

practical issues such as employment, housing, or financial issues (Rushton & Beaumont, 2002).

Social workers also provide discharge planning services that are designed to assist individuals and families in developing and implementing timely and appropriate service plans following release from primary health care services (Cummings & Cockerham, 1997; Morrow-Howell, Chadiha, Proctor, Hourd-Bryant, & Dore, 1996; Proctor, Morrow-Howell, & Kaplan, 1996; Ruster, 1995). Discharge plans can include the arrangement and organization of services or equipment that are needed in the individuals' home, placement in a long term care home, or any other service requirements that are needed at the time of discharge (Cummings & Cockerham, 1997; Morrow-Howell et al., 1996; Proctor, Morrow-Howell, & Kaplan, 1996; Ruster, 1995). Discharge plans are determined based on the individual and family medical and social needs, taking into consideration the individuals' treatment needs, the preferences of the individual and family, the level of care needed, possible financial resources, and the services and facilities available in the community (Cummings & Cockerham, 1997).

Social workers also work to help individuals expand and strengthen their network of social supports (Davis et al., 2004). This refers to both informal and formal social supports. Performing an advocacy role, social workers work to ensure that individuals and families receive what they are entitled to or obtain the services

that are needed, including those provided by the primary health care system (Davis et al., 2004; Marino, Weinman, & Soudelier, 2001). Social workers also work to ensure that the services that individuals and families are entitled to and need are delivered properly and in a timely manner, that gaps in service are identified, and the needs of the individual are recognized and acknowledged (Marino, Weinman, & Soudelier, 2001). Through effective advocacy and appropriate referrals to community resources and supports, it is hoped that the individual's and the family's social support network is enhanced with the goal of increasing overall health and social well being.

Social workers also engage in crisis intervention when working in primary health care settings. They work to assist individuals and families resolve psychosocial dilemmas born from a traumatic event with the goal of improving overall health and social wellbeing (Boes, 1997). A traumatic event can impact negatively on an individual's or family's ability to effectively cope and can result in emotional, mental, physical, and behavioural problems. Crisis intervention provides immediate, short term assistance which aims to reduce the intensity of these problems and return the individual or family to their previous level of functioning. By providing support and engaging in the exploration of new and alternative coping strategies, social workers are able to help individuals and families who are experiencing emotional, mental, physical, and behavioural problems attempt to

work through these issues and hopefully successfully recover from the effects of the traumatic event. Crisis intervention can be utilized with individuals and families who have experienced a range of distinct and diverse traumatic events. This includes those individuals who are involved in personal injury motor vehicle incidents.

Personal Injury Motor Vehicle Incidents and Adverse Stress Reactions

Involvement in personal injury motor vehicle incidents (MVI) is a shared experience for many British Columbians. In 2005, there were 50 573 traffic collisions reported in BC with 28 752 resulting in personal injuries; approximately 79 people per day (British Columbia Motor Vehicle Branch, 2005). A significant percentage of the individuals who are involved in a personal injury MVI develop an adverse stress reaction as a result of the traumatic event (Blanchard & Hickling, 2004; Blanchard et al., 2004; Brom, Kleber, & Hofman, 1993; Bryant & Harvey, 1996; Buckley, Blanchard, & Hickling, 1996; Butler & Moffic, 1999; Ehlers, Mayou, & Bryant, 1998; Jeavons, Greenwood, & Horne, 2000; Kuch, Cox, & Evans, 1996; Kuhn, Blanchard, & Hickling, 2003; Mayou, 2002; Paylo & Beck, 2005). If this adverse stress reaction remains undetected, it is possible that a more serious problem could develop; namely, post traumatic stress disorder (PTSD) (Blanchard & Hickling, 2004; Bryant & Harvey, 1996; Buckley, Blanchard, & Hickling, 1996; Butler & Moffic, 1999; Ehlers, Mayou, & Bryant, 1998; Jeavons, Greenwood, & Horne, 2000; Kuch, Cox, & Evans,

1996; Kuhn, Blanchard, & Hickling, 2003). Individuals with post traumatic stress disorder (PTSD) experience persistent symptoms of anxiety or increased arousal which can include indications of avoidance, intrusiveness, and hyperarousal symptoms related to the traumatic event (Brom, Kleber, & Hofman, 1993; Butler & Moffic, 1999; Ehlers, Mayou, & Bryant, 1998; Ehrenreich, 2003; Matthews, 2004; van der Kolk, 1994). These symptoms can impact negatively on an individual's social, occupational, and general functioning (Ehrenreich, 2003; Kendall & Buys, 1999; Kuch, Cox, & Evans, 1996; Kuhn, Blanchard, & Hickling, 2003; Mayou, 2002; Paylo & Beck, 2005).

Traumatic events are those that evoke a sense of fear, helplessness, or horror due to serious injury, threat of serious injury, death, threat of death, or threat to physical integrity (Butler & Moffic, 1999; Ehrenreich, 2003; Vaiva, Brunet, Lebigot, Boss, Ducrocq, Devos, Laffargue, & Goudmand, 2003). This sense of fear, helplessness, or horror can result from personal experience with the traumatic event or through the witnessing or gained knowledge of the traumatic event (Butler & Moffic, 1999; Ehrenreich, 2003; Vaiva et al., 2003). Most individuals who experience the murder of a loved one, a sexual assault, or losing one's home in a fire experience this sense of fear, helplessness, or horror and react in similar ways (Vaiva et al., 2003). However, not all individuals involved in a personal injury MVI experience these feelings or respond in the same way (Vaiva et al., 2003). The level to which the

individual is affected by the personal injury MVI can vary greatly depending on the severity of the MVI and the degree or severities of the adverse stress reactions to follow can be difficult to determine (Ehrenreich, 2003; Jeavons, Greenwood, & Horne, 2000).

A great deal of research has been conducted on the development of psychological symptoms and emotional issues in severely physically injured individuals and those receiving medical treatment following the incident (Blanchard, Hickling, Taylor, & Loos, 1995; Gordon, Blaszczynski, Silove, Sloane, & Hillman, 1996, as cited in Jeavons, Greenwood, & Horne, 2000; Green, McFarlane, Hunter, & Griggs, 1993, as cited in Jeavons, Greenwood, & Horne, 2000; Mayou, Bryant, & Duthie, 1993 as cited in Jeavons, Greenwood, & Horne, 2000). However, it is also necessary to assess those individuals who experience relatively minor injuries as they may also experience significant psychological and emotional symptoms and issues (Brom, Kleber, & Hofman, 1993; Jeavons, Greenwood, & Horne, 2000). These symptoms and issues could be an indication of adverse stress reactions.

Some individuals are able to recover from an MVI without experiencing any adverse stress reactions. However, a substantial number of people do experience some form of adverse stress reactions, which negatively impacts on their lives at some level (Brom, Kleber, & Hofman, 1993; Buckley, Blanchard, & Hickling, 1996; Butler & Moffic, 1999). Adverse stress reactions following an MVI can occur in a

variety of ways and on a continuum of severity and longevity. Driving phobias and panic-like symptoms are perhaps the most common adverse stress reactions following an MVI (Blanchard, Hickling, Freidenberg, Malta, Kuhn, & Sykes, 2003; Butler & Moffic, 1999; Kendall & Buys, 1999). These types of reactions may include any or all of a number of symptoms and behaviours. For instance, at its extreme, driving phobia may involve avoidance of any driving situation (Blanchard & Hickling, 2004; Butler & Moffic, 1999; Kendall & Buys, 1999). Lesser forms of driving phobia commonly seen among MVI victims include avoidance of driving near the scene of an incident or in driving conditions that are similar to the conditions occurring during the MVI (Blanchard & Hickling, 2004; Butler & Moffic, 1999; Kendall & Buys, 1999). Many MVI victims avoid being passengers in a vehicle due to feelings of loss of control (Blanchard & Hickling, 2004; Butler & Moffic 1999; Kendall & Buys, 1999). On the other hand, some victims prefer not to drive and would rather ride along as a passenger. Some victims do not outright avoid these and other specific driving situations, but endure driving in general with great anxiety (Blanchard & Hickling, 2004; Butler & Moffic, 1999; Kendall & Buys, 1999). They may experience a multitude of anxiety or panic like symptoms when driving including shortness of breath, pounding heart, hot flashes or cold chills, sweating, shaking, trouble breathing, and visual impairment (Blanchard & Hickling, 2004; Kendall & Buys, 1999). During such anxiety reactions, victims may feel as though

they are out of control and may fear becoming involved in another MVI. These adverse stress reactions can impact negatively on an individual's ability to function and cope with the activities of daily living (Ehrenreich, 2003; Kendall & Buys, 1999; Kuch, Cox, & Evans, 1996; Kuhn, Blanchard, & Hickling, 2003; Mayou, 2002; Paylo & Beck, 2005). This could indicate the development of a more serious condition involving a constellation of symptoms called post traumatic stress disorder.

PTSD has most commonly been associated with wartime combat and rape (Wilson & Keane, 1997). However, researchers have begun to discover that a certain percentage of MVI victims develop PTSD following their incident (Blanchard & Hickling, 2004; Blanchard et al., 2004; Brom, Kleber, & Hofman, 1993; Buckley, Blanchard, & Hickling, 1996; Butler & Moffic, 1999; Ehlers, Mayou, & Bryant, 1998; Jeavons, Greenwood, & Horne, 2000; Kuch, Cox, & Evans, 1996; Kuhn, Blanchard, & Hickling, 2003; Mayou, 2002; Paylo & Beck, 2005). A number of research studies have been completed in the past 15 years to address the issue of MVIs and the development of PTSD. These research studies have focused primarily on the short term psychiatric consequences of MVIs and more specifically on the probability of developing PTSD (Blanchard et al., 1995; Frommberger, Stieglitz, Nybert, Schlickewei, Kuner, & Berger, 1998 as cited in Blanchard et al., 2004; Harvey & Bryant, 1999; Koren, Arnon, & Klein, 1999, as cited in Blanchard et al., 2004; Mayou, Bryant, & Duthie, 1993, as cited in Blanchard et al., 2004; Shalev, Freedman, Peri,

Brandes, Sahar, Orr, & Pitman, 1998, as cited in Blanchard et al., 2004; Ursano, Fullerton, Epstein, Crowley, Kao, Vance, Craig, Dougall, & Braum, 1999, as cited in Blanchard et al., 2004). For instance, Breslau, Davis, Andreski, and Peterson completed a study in 1991 that focused on lifetime prevalence of traumatic events and incidence of PTSD (as cited in Blanchard & Hickling, 2004). They found that of those individuals experiencing a traumatic event in their lifetime, 9.4 percent were involved in an MVI and that 11.6 percent of those individuals met the criteria for PTSD (Breslau, Davis, Andreski, & Peterson, 1995, as cited in Blanchard & Hickling, 2004).

In 1992, Norris completed a study which also focused on lifetime prevalence of traumatic events and the presence of PTSD (as cited in Blanchard & Hickling, 2004). She found that 23.4 percent of people surveyed had experienced a traumatic MVI in their lifetime and that 11.5 percent of those individuals met the criteria for PTSD (Norris, 1992, as cited in Blanchard & Hickling, 2004). Kessler completed a study in 1995 focusing on the National Co-Morbidity survey and the incidence of traumatic MVIs and prevalence of PTSD (as cited in Blanchard & Hickling, 2004). It was found that 19.4 percent of individuals surveyed were involved in a traumatic MVI and that 6.5 percent met the criteria for PTSD.

In 1996, Blanchard and Hickling completed a five year study focusing on MVI victims and the incidence of PTSD (as cited in Blanchard & Hickling, 2004). It was

found that 39 percent of 158 MVI victims met the criteria for PTSD within one to four months after the traumatic event (as cited in Blanchard & Hickling, 2004). Harvey and Bryant completed a study in 1998 in Australia that also focused on MVI victims and the incidence of PTSD. It was found that out of 92 MVI victims, 25 percent of them met the criteria for PTSD (Harvey & Bryant, 1999). Taking into consideration all of the above studies, it appears that 9.4 to 23.4 percent of individuals will be involved in a personal injury MVI and that 6.5 to 39 percent of these individuals will develop PTSD. From this, it could be determined that a significant proportion of personal injury MVI victims manifest enough of an adverse stress reaction to warrant a full diagnosis of PTSD.

Symptoms of Post Traumatic Stress Disorder

PTSD is a psychiatric disorder that can occur following the experiences or witnessing of life-threatening events such as military combat, natural disasters, terrorist incidents, serious accidents, or violent personal assaults (Canadian Mental Health Association, 2007; van der Kolk, 1994; van der Kolk, van der Hart, & Burbridge, 1995). People who suffer from PTSD often relive the experience through flashbacks, have difficulty sleeping, and feel detached or estranged (Ehrenreich, 2003; van der Kolk, van der Hart, & Burbridge, 1995). These symptoms can be severe enough and last long enough to significantly impair the person's social, occupational, and general functioning (Ehrenreich, 2003; Kendall & Buys, 1999;

Kuch, Cox, & Evans, 1996; Kuhn, Blanchard, & Hickling, 2003; Mayou, 2002; Paylo & Beck, 2005). PTSD symptoms are generally divided into three categories: avoidance, intrusiveness, and hyperarousal (Brom, Kleber, & Hofman, 1993; Butler & Moffic, 1999; Ehlers, Mayou, & Bryant, 1998; Ehrenreich, 2003; Matthews, 2004; van der Kolk, 1994). People who have been exposed to traumatic experiences may notice any number of symptoms in almost any combination. However, the diagnosis of PTSD means that someone has met very specific diagnostic criteria as established by the Diagnostic Statistical Manual of Mental Disorders (4th Ed.).

According to the Diagnostic Statistical Manual of Mental Disorders (4th Ed., Text Revision), PTSD is characterized by the development of distinctive symptoms after exposure to a traumatic event (American Psychiatric Association, 2000). The traumatic event must involve direct personal experience and entail actual or threatened death or injury of the individual themselves, the witnessing of the same of another person, or learning about the same of a family member or close friend (American Psychiatric Association, 2000; Butler & Moffic, 1999; Canadian Mental Health Association, 2007). The person's response to the event must involve intense fear, helplessness, or horror and is characterized by symptoms which can include unrelenting re-experiencing of the event (intrusiveness), constant avoidance of the stimuli associated with the trauma and numbing of general responsiveness (avoidance), and continuing symptoms of increased arousal (hyperarousal)

(American Psychiatric Association, 2000; Brom, Kleber, & Hofman, 1993; Butler & Moffic, 1999; Ehlers, Mayou, & Bryant, 1998; Ehrenreich, 2003; Matthews, 2004; van der Kolk, 1994).

Individuals with PTSD frequently feel as if the trauma is happening again and experience intrusive thoughts (Brom, Kleber, & Hofman, 1993; Butler & Moffic, 1999; Ehlers et al., 1998). This is sometimes called a flashback, reliving the experience, or abreaction (American Psychiatric Association, 2000; Butler & Moffic, 1999). The individuals may have intrusive pictures in his/her head about the trauma, have recurrent nightmares, or may even experience hallucinations about the trauma (Brom, Kleber, & Hofman, 1993; Butler & Moffic, 1999; van der Kolk, van der Hart, Burbridge, 1995). For example, some individuals experience recurrent and intrusive memories of the traumatic event or experience incidents of recurring nightmares or dreams where the traumatic event is repeated continually (Brom, Kleber, & Hofman, 1993; Butler & Moffic, 1999; Sadigh, 1999). In rare instances, an individual can experience a dissociative state where the circumstances surrounding the traumatic event are relived and the individual behaves as though the traumatic event is occurring again (American Psychiatric Association, 2000; Ehlers et al., 1998; van der Kolk, van der Hart, & Burbridge, 1995). Intrusive symptoms can also cause people to lose touch with the "here and now" and react in ways that they did when the trauma originally occurred (van der Kolk, van der Hart, & Burbridge, 1995).

Intense psychological distress often occurs when the person is exposed to events or circumstances that are similar to or represent an aspect of the traumatic event and individuals with PTSD frequently feel as if the trauma is happening again (Brom, Kleber, & Hofman, 1993; Butler & Moffic, 1999; van der Kolk, van der Hart, & Burbridge, 1995). For example, many years later a victim of child abuse may hide trembling in a closet when feeling threatened, even if the perceived threat is not abuse related.

Individuals with PTSD also work hard to avoid anything that might remind them of the traumatic experience (Brom, Kleber, & Hofman, 1993; Butler & Moffic, 1999; Ehlers et al., 1998; van der Kolk, van der Hart, & Burbridge, 1995). Individuals tend to persistently avoid any stimuli associated with the traumatic event, which can include thoughts, feelings, or conversations about the traumatic event (American Psychiatric Association, 2000; Butler & Moffic, 1999; van der Kolk, van der Hart, & Burbridge, 1995). They may also try to avoid anything that may trigger memories of the trauma, such as sights, sounds, and smells associated with the trauma. They may also try to avoid people, places, activities, or things that are reminders. This avoidance of reminders may include amnesia for an important aspect of the traumatic event. Individuals may also numb out emotions to avoid painful, overwhelming feelings (American Psychiatric Association, 2000; Butler & Moffic, 1999; Ehlers et al., 1998; van de Kolk et al., 1995). Numbing of thoughts and feelings

in response to trauma is known as dissociation and is a hallmark of PTSD (van der Kolk, van der Hart, & Burbridge, 1995). Dissociation involves reduced responsiveness to the world around them, commonly referred to as "psychic numbing" and usually occurs soon after the traumatic event (Ehlers et al., 1998; van der Kolk, van der Hart, & Burbridge, 1995). Often individuals with PTSD withdraw from activities they used to enjoy and feel detached from other individuals in their lives (Butler & Moffic, 1999; Kendall & Buys, 1999; Kuhn, Blanchard, & Hickling, 2003). Individuals also complain of a reduced ability to feel emotions, especially those associated with intimacy and sexuality and tend to experience pessimistic feelings about the future (Kendall & Buys, 1999). Frequently, individuals with PTSD use drugs or alcohol to avoid trauma-related feelings and memories and to cope with the affects of PTSD on their social, occupational, and general functioning (Kendall & Buys, 1999).

Symptoms of psychological and physiological arousal are also very distinctive in people with PTSD. Individuals tend to have persistent symptoms of anxiety or increased arousal that was not present prior to the traumatic event (Kendall & Buys, 1999). Individuals with PTSD tend to be both emotionally and physically in a state of constant readiness in case the trauma happens again. They may be very jumpy, easily startled, and irritable (Butler & Moffic, 1999; Kendall & Buys, 1999). Individuals may also have sleep disturbances like insomnia or

nightmares. For example, individuals may have difficulties falling or staying asleep due to recurrent nightmares or dreams about the traumatic event (Kendall & Buys, 1999; van der Kolk, van der Hart, & Burbridge, 1995). They may seem constantly on guard and may find it difficult to concentrate (van der Kolk, van der Hart, & Burbridge, 1995). Sometimes individuals with PTSD will have panic attacks accompanied by shortness of breath and chest pain (Kendall & Buys, 1999). They may also experience petulance or outbursts of anger.

The symptoms of PTSD must be present for a period of time equal to one month or more and must cause significant problems in social, occupational, or general functioning (Canadian Mental Health Association, 2007; Ehlers, 1998). PTSD can occur at any age and symptoms usually begin within the first three months of the traumatic event (American Psychiatric Association, 2000; Canadian Mental Health Association, 2007). In some instances the symptoms of PTSD are delayed by months or even years, commonly called PTSD with delayed onset (American Psychiatric Association, 2000; Butler & Moffic, 1999; Canadian Mental Health Association, 2007). Duration of the symptoms varies, with complete recovery occurring within 3 months in approximately half of cases, with many others having persisting symptoms for longer than 12 months after the trauma (American Psychiatric Association, 2000; Canadian Mental Health Association, 2007). The severity, duration, and proximity of an individual's exposure to the traumatic event

are some of the most important factors affecting the likelihood of developing this disorder (Jeavons, Greenwood, & Horne, 2000). However, there is some evidence that social supports, family history, childhood experiences, personality variables, and preexisting mental disorders may influence the development of PTSD (Bryant & Harvey, 1996; Ehrenreich, 2003). However, this disorder can develop in individuals without any predisposing conditions, particularly if the stressor is especially extreme.

As previously noted, PTSD is characterized by the development of distinctive symptoms after exposure to a traumatic event (American Psychiatric Association, 2000). The three main categories of PTSD symptoms are avoidance, intrusive, and hyperarousal and if these responses occur frequently, last at least one month, and interfere with daily functioning, the individual may be suffering from PTSD. A PTSD diagnosis carries with it consequences that an individual may be experiencing, in combination with symptoms of PTSD (Maes, Mylle, Delmeire, & Altamura, 2000; O'Donnell, Creamer, Elliott, & Atkin, 2005; Veazey, Blanchard, Hickling & Buckley, 2004). There are three major categories of consequences associated with PTSD: physiological symptoms, psychological symptoms, and impaired social functioning (Blanchard & Hickling, 2004).

Consequences of Post Traumatic Stress Disorder

Post traumatic Stress Disorder (PTSD) disrupts the functioning of those afflicted by it, interfering with the ability to meet their daily needs and perform the most basic tasks (Ehrenreich, 2003; Kendall & Buys, 1999; Kuch, Cox, & Evans, 1996; Kuhn, Blanchard, & Hickling, 2003; Mayou, 2002; Paylo & Beck, 2005). Trauma continues to intrude on the lives of people with PTSD as they relive the life-threatening experiences they have suffered with visual, auditory and/or somatic reality, reacting in mind and body as though such events were still occurring (Brom, Kleber, & Hofman, 1993; Butler & Moffic, 1999; Ehlers et al., 1998). As previously noted, not everyone experiencing traumatic events develops PTSD; it is a complex psychobiological condition that can emerge in the wake of life-threatening experiences when normal psychological and somatic stress responses to a traumatic event are not resolved and released. However, for those individuals who do develop PTSD, it can have severe and long lasting effects on people's lives. It is marked by clear physiological and psychological consequences (Blanchard & Hickling, 2004; Maes et al., 2000; Palyo et al., 2005; van der Kolk, van der Hart, & Burbridge, 1995). PTSD is complicated by the fact that it frequently occurs in conjunction with related disorders such as depression, substance abuse, problems of memory and cognition, and other problems of physical and mental health. The disorder is also associated with impairment of the person's ability to function in

social or family life, including occupation instability, marital problems and divorce, family discord, and difficulties parenting (Kendall & Buys, 1999; Kuhn, Blanchard, & Hickling, 2003; Mayou, 2002; Palyo et al., 2005).

PTSD is associated with a number of distinctive neurobiological and physiological changes (Yehuda & McFarlane, 1995). PTSD may be associated with stable neurobiological alterations in both the central and autonomic nervous systems, such as altered brainwave activity, decreased volume of the hippocampus, and abnormal activation of the amygdale (van der Kolk, 1994). The hippocampus and the amygdale are involved in the processing and integration of memory. The amygdale has also been found to be involved in coordinating the body's fear response (van der Kolk, 1994). These changes in the central and autonomic nervous systems could be responsible for the highly elevated physiological responses that traumatized individuals tend to experience when recalling traumatic experiences or in response to intense but neutral stimuli.

People with PTSD also tend to have abnormal levels of key hormones that are involved in the body's response to stress (van der Kolk, 1994). Some studies have shown that cortisol levels in those with PTSD are lower than normal and epinephrine and norepinephrine levels are higher than normal levels. These hormones, when released in appropriate amounts, help the individual mobilize the required energy to deal with the stress (van der Kolk, 1994). Therefore significant

changes in hormone levels can impact coping behaviours and how the body responds to stress.

Other physiological alterations associated with PTSD can include hyper arousal of the sympathetic nervous system, increased sensitivity of the startle reflex, and sleep abnormalities (Meichenbaum, 1994). Individuals suffering from PTSD may also complain of headaches, gastrointestinal troubles, immune system problems, dizziness, chest pain, and discomfort in other parts of the body (Meichenbaum, 1994).

PTSD is also associated with the increased likelihood of co-occurring psychiatric disorders. The prevalence of comorbid psychiatric conditions have been investigated in a number of traumatized groups with PTSD, and these studies have found that anywhere from 50 to 90 percent of individuals with chronic PTSD also meet the diagnostic criteria for another psychiatric disorder, including substance abuse (Yehuda & McFarlane, 1995). In general, psychiatric comorbidity appears to develop over time in traumatized individuals with PTSD (Blanchard et al., 2004; Maes et al., 2000; Mayou, 2002; Yehuda & McFarlane, 1995). The most common psychiatric disorders comorbid with PTSD are mood disorders such as major depressive episode, dysthymia, and mania; anxiety disorders such as phobias, panic, and social anxiety; and substance abuse disorders such as drug or alcohol abuse or dependency (Blanchard et al., 2004; Maes et al., 2000; Mayou, 2002). This can lead to

problems in psychosocial functioning. For example, phobic avoidance of situations or activities that resemble or symbolize the original trauma may interfere with interpersonal relationships and lead to marital conflict, divorce, or loss of a job.

PTSD can also significantly impact social functioning, independent of comorbid conditions. It can result in significant personal suffering. Avoidance of important activities, decreased sleep, fatigue, and interference with one's relationships are some of the more typical consequences (Kuhn, Blanchard, & Hickling, 2003; Mayou, 2002; Paylo & Beck, 2005). These problems can have significant financial costs to the individual and society (Kendall & Buys, 1999). For instance, PTSD has been associated with subsequent worse physical health, resulting in increased medical care and absenteeism from work or school. PTSD sufferers are also more likely to be unemployed and have lower incomes than similar persons without PTSD (Kendall & Buys, 1999; Matthews, 2005).

It is clear from the research that a significant percentage of individuals involved in a personal injury MVI experience adverse stress reaction following the traumatic event (Blanchard & Hickling, 2004; Blanchard et al., 2004; Brom, Kleber, & Hofman, 1993; Buckley, Blanchard, & Hickling, 1996; Butler & Moffic, 1999; Ehlers, Mayou, & Bryant, 1998; Jeavons, Greenwood, & Horne, 2000; Kuch, Cox, & Evans, 1996; Kuhn, Blanchard, & Hickling, 2003; Mayou, 2002; Paylo & Beck, 2005). It is also clear that some people develop a more serious adverse stress reaction; namely

PTSD (Blanchard & Hickling, 2004; Buckley, Blanchard, & Hickling, 1996; Butler & Moffic, 1999; Ehlers, Mayou, & Bryant, 1998; Jeavons, Greenwood, & Horne, 2000; Kuch, Cox, & Evans, 1996; Kuhn, Blanchard, & Hickling, 2003). Taking into consideration the symptoms and behaviours associated with adverse stress reactions and PTSD and the consequences of PTSD itself, it seems that, following a personal injury MVI, the appropriate course of action would be to conduct a preliminary assessment in order to determine whether or not adverse stress reactions are present. This could aid in the detection of acute, chronic, or delayed onset PTSD.

As previously noted, social work professionals engaging with individuals and families in primary health care settings are required to possess specific competencies and fulfill various roles. One of the roles that social workers assume involves providing crisis intervention to people who have experienced a traumatic event. Personal injury motor vehicle incidents represent one type of traumatic event that social workers working in primary health care settings may encounter during the course of their practice. It is important that social workers engage with individuals involved in personal injury motor vehicle incidents in order to assess for adverse stress reactions and provide crisis intervention if necessary. This is completed with the goal of improving the health and social wellbeing of individuals and families. Through a practicum placement with the Quick Response Program at the Prince George Regional Hospital, I was afforded the opportunity to gain the

competencies necessary to work in primary health care settings and undertake a range of diverse and unique roles. I was also provided the opportunity to interact with individuals involved in personal injury motor vehicle incidents and complete research focusing on the development of adverse stress reactions.

Chapter Two: Practicum Placement

Practicum Placement Description

The Quick Response Program at the Prince George Regional Hospital is designed to provide immediate intervention to patients presenting to the Emergency department and who are admitted to the Intensive Care Unit. The focus of the program is on improving the social and emotional well being of the patient and their family and assisting them via psycho-social counseling and practical instrumental resources during a health related event. The goal of the program is to strengthen the psychosocial functioning of patients and their support systems and therefore the Quick Response worker assists with discharge planning, psychosocial assessments, crisis intervention, and support of patients and their family members.

Summary of Practicum Learning Objectives

The duration of the practicum was 16 weeks starting in June 2005 and completed in September 2005. The practicum learning objectives identified in the Learning Contract included:

I. To learn about a range of available resources.

II. To gain insight into the role of social work in a medical based model and the associated structural issues.

III. To learn and utilize effective grief intervention skills.

IV. To learn and utilize effective crisis intervention skills.

V. To improve interpersonal communication for social work, both verbal and non verbal.

VI. To complete background readings on crisis theory and therapeutic treatments.

VII. To appropriately document activities in progress notes and other forms.

VIII. To conduct research regarding the impact of personal injury motor vehicle incidents and the development of adverse stress reactions.

These practicum learning objectives were achieved and will be individually addressed and discussed.

Resources

One of the learning objectives achieved through this practicum was an increased understanding and knowledge of the resources available in the community of Prince George as well as the resources available to individuals through the Northern Health Authority. Several resources were utilized during the course of the practicum placement. However, the resources that were utilized most often during the practicum included emergency social services, seniors' services, and grief and loss services.

Emergency social services are resources that provide service on a short term basis to preserve the physical and emotional health and well being of individuals, families, and communities (Hick, 2002). These services aim to provide essential and

necessary assistance, which can include access to food, shelter, and clothing, with the goal of preserving life and health (Hick, 2002). Several community based organizations within the community of Prince George provide these types of assistance. For instance, community based organizations such as St. Vincent de Paul, the Salvation Army, Active Support Against Poverty, the Elizabeth Fry Society, Association Advocating for Women and Children, and the Prince George Native Friendship Centre provide emergency social service assistance. Through various programs, they work to ensure that people have access to food and meals. They also work to ensure that people have access to essential clothing, blankets, and toiletries as well as safe temporary housing for those without a place to live. Finally, they work to ensure that people have access to emotional support and advocacy when needed. All of these community based organizations work to ensure that people have access to the necessities of life and health. Nevertheless, emergency social services are also provided through the Northern Health Authority. These services take the form of taxi vouchers, assistance with obtaining necessary prescriptions, and access to food.

Resources are also available for seniors and their families. The services that are available for seniors are diverse and varied. Some of the community based resources such as the Elder Citizen's Recreation Centre, the Hart Pioneer Centre Association, the Métis Elders Society, the North Central Senior Association, and the

Seniors Activity Centre are focused on recreational services and offer drop in programs and fitness and recreational activities. However, there are also services available that focus on providing social support services for seniors and seniors at risk. These resources provide outreach, caregiver programs, transportation, meal services, and a variety of other services for seniors at risk. Community based resources such as We Care Home Health Care, the Carefree Society and Handi Dart, and Income Tax Clinics all work to provide social support services to seniors. The Prince George Council of Seniors also provides services to seniors which include but are not limited to the Seniors Outreach Program, Meals on Wheels, the Seniors Information Line, and other limited services such as locating emergency access to medical supplies and food. Other social support services such as home care, adult day support, and long term care are provided by the Northern Health Authority. Senior's services provided through the Northern Health Authority include Home and Community Care, Home Support, Community Home Nursing, Community Rehabilitation, Life Line, Rainbow Adult Daycare, Seniors Housing, and Long Term Care, including Laurier Manor, Alward Place, Jubilee Lodge, and Simon Fraser Lodge.

Resources focusing on grief and loss were also utilized. Grief and loss resources provided services relating primarily to palliative and after life care. Palliative care is a special kind of health care for individuals and families who are

living with a life-threatening illness (Wijne, McEnhill, Curfs, & Hollins, 2007). The goal of palliative care is to provide comfort and to preserve the dignity of the individual as well as ensure the best quality of life for both the individual and their family (Wijne et al., 2007). Community based resources such as the Prince George Hospice Society and Rainbows Peer Support Group work to provide these services through supportive programs and peer support. The Prince George Hospice Society also provides services through the Rotary Hospice House. The Rotary Hospice House provides care to individuals who are living with a life-threatening illness. It provides a home-like atmosphere for its guests, their families, and their friends and works to preserve the dignity of the individual. The Northern Health Authority also works to provide palliative and after life care. These services are provided by the Hospital Chaplain, social workers, the Palliative Home Nursing Program, and the Aboriginal Hospital Liaison when appropriate.

As previously noted several other resources were also employed during the practicum placement. Some of the community based resources that were used included the Prince George Sexual Assault Centre, St. Patrick's Transition House, Northern BC Crisis Line, and the Northern John Howard Society. Resources made available through the Northern Health Authority were also used and included the Adolescent Psychiatry Assessment, Adult Mental Health, the Alcohol and Drug Program, and the Detox Assessment Unit. Government and municipal resources

including the Ministry of Employment and Income Assistance and the Royal Canadian Mounted Police were also used.

Role of Social Work in Health Care

Throughout the course of the practicum placement, it became clear that social workers engage in several different and remarkable roles when working in health care settings. These included the roles of assessor, supporter, educator, and liaison. The practicum placement also provided the opportunity to learn about the structural issues that social workers face when working in a health care setting.

One of the roles that social workers fulfill on a daily basis relates to assessments. Biopsychosocial assessments need to be completed with individuals and families in order to determine effective and useful interventions (Davis, Milosevi, Baldry, & Walsh, 2004). It provides additional information, specifically the physical, psychological, and social aspects of an individual, which in turn assists primary health care professionals with the creation of comprehensive plans of care. These comprehensive plans of care are then used to determine appropriate and suitable interventions (Davis et al., 2004). Biopsychosocial assessments are also used to ensure that when referrals are completed, they are proper and practical. This relates to both community based resources and those resources made available through the hospital. Biopsychosocial assessments are also used to complete discharge plans. Discharge refers to the point at which the individual leaves the

hospital (Carroll & Dowling, 2007). Discharge planning involves the arranging of services such as rehabilitation, home care, and physical therapy, and the attainment of necessary equipment that addresses the needs of the individual once they leave the hospital (Carroll & Dowling, 2007).

Another role of the social worker working in a health care setting is to provide emotional and practical support to individuals and families (Davis et al., 2004). This was undertaken with individuals and families while they were in the Emergency Room or the Intensive Care Unit. Emotional support usually took the form of crisis or grief counseling and support. However, this was not always necessary or desired by the individual or the family. While crisis and grief counseling are an important component of emotional support, it was found that in some cases, all that was needed was someone to talk to. On several occasions, providing emotional support took the form of simply connecting with the individual and their family, being their contact person while they are in the hospital, and monitoring their situation and answering questions. In many cases, providing emotional support involved simply touching base with individuals and families and letting them know that there was someone to talk to. Practical support, on the other hand, involved providing referrals and advocating on the behalf of individuals and families for financial and housing resources. These types of

practical support included assistance with filling prescriptions, access to taxi vouchers, and providing information on available resources in the community.

Another role of social workers working in a health care setting is to provide information to the individual and family regarding the individual's illness (Davis et al., 2004). The social worker would also be responsible for disseminating information to the individual and family about the role of the social worker, services that are available through the hospital, available community based services, and the rights of the individual. In some cases, in order to provide full information to the individual and their family, the social worker would organize a family conference. Family conferences provide an opportunity for the individual, family, and principal health care providers involved in the care of the individual to engage in a discussion regarding the individual's condition and treatment. This provides an opportunity for full disclosure of information to the individual and family members. Social workers also provide general information on end-of-life concerns such as power of attorney, wills, choosing executors, and representation agreements and on how the hospital system functions.

Social workers working in health care settings also engage in liaison (Davis et al., 2004). In a health care setting, liaison takes the form of connecting, networking, and acting as moderator between the primary health care providers involved in the care of an individual, the individual, and the family members (Davis et al., 2004).

This provides the social worker with the opportunity to engage in advocacy as they work to communicate the concerns and fears of the individual and family to the primary health care professionals. It also involves the facilitation of communication between the primary health care professionals, the individual, and the family when necessary (Davis et al., 2004). This requires that the social worker engage in discussions with primary health care professionals, individuals, and families on a daily basis. This is completed with the goal of relieving the feeling of anxiety regarding the individual's illness that individuals and families sometimes feel when in the hospital setting.

As previously noted, the practicum placement also provided the opportunity to learn about some of the structural issues that social workers face when working in a health care setting. Firstly, it was evident that there was a lack of acknowledgment regarding the usefulness of social work practice in health care settings by other health care professionals. This could be attributed to a lack of knowledge and understanding about the values and principles underlying social work practice and a misunderstanding of the roles that social workers can undertake in a health care setting. This proved to be a hindrance to the active participation of social work in working with individuals and families while in the hospital as the decision to involve social workers was usually made by other health care professions. Therefore, it is necessary for social workers to take an active role in providing

information to individuals and families regarding the services that the social work department could provide.

Grief Intervention Skills

The practicum placement also provided an opportunity to learn and use grief intervention skills. Grief involves the experiencing of physical and emotional suffering as a result of a loss (James & Gilliland, 2005). Within a health care setting, the term loss generally refers to the death of a loved one, whether it is a family member or a friend. It is important that individuals and families are supported during this time of grief as severe reactions could develop and effect their pscyhosocial functioning and ability to cope (Worden, 2003). Grief counselling provides this support and assists the family to deal with the grief associated with the loss.

Grief counseling facilitates the process of resolution in regards to the natural reactions to loss. The first step is to assist the family with recognizing the loss and ackowledging the death (Corless, Germino, & Pittman, 2003). Sometimes this requires that the family participate in a viewing of the body. This was most often completed when the death of an individual involves tragic circumstances. The social worker is tasked with the job of positioning the body and arranging the viewing room in such a way as to create an environment of peace and calm. Once the viewing room is arranged, the social worker is responsible for leading the family to

the viewing room and providing the family with emotional support and guidance. Some people require only a moment to acknowledge the death, while others need more time to allow themselves to recognize and start to experience the loss.

Once the family has recognized the loss and acknowledged the death, it is important that the social worker encourage the family to feel the pain and grieve for their loss (James, 2007). In grief counseling, it is necessary that the social worker assist the family as they work through the physical and emotional pain of grief and provide as much emotional support as possible. This requires the use of empathy and active listening as the social worker works to affirm and acknowledge the family's pain, their feelings, and their emotions (James & Gilliland, 2005). Social workers can also provide emotional support by answering any questions that family might have and providing information on next steps.

It is also important that the social worker encourage the family to reminisce about their loved one and recall the relationship that they had with them (Worden, 2003). Family members should be encouraged to talk to one another about their loved one and share stories and memories. This provides the family with the opportunity to not only talk about their loved one, but also allows them to revitalize and re-experience all the feelings that they used to have (James, 2007). Family members may continue to talk about their loved one for a long period of time depending on the nature of the relationship they had with the deceased and their

coping strategies. However, this eventually works to assist the family with surrendering their old attachments to their loved one and moving on with their lives, without forgetting their loved ones and the impact they had (Corless, Germino, & Pittman, 2003).

Crisis Intervention Skills

This practicum placement also provided the opportunity to learn and use crisis intervention skills. Crisis intervention refers to the methods used to offer immediate, short term help to individuals who experience an event that produces emotional, mental, physical, and behavioural problems (James & Gilliland, 2005). It aims to reduce the intensity of these problems and return the individual either to their previous level of functioning or to a different level of functioning that is more appropriate. Crisis intervention involves the completion of six steps including defining the problem, ensuring client safety, providing support, examining alternatives, making plans, and obtaining commitment to positive action. The first step involves the recognition that a problem exists and focuses on the significance of the event on the individual and the individual's current level of functioning (James, 2007). It is also important to identify other signs and symptoms that may indicate a problem for those experiencing crisis. These signs and symptoms can be emotional, mental, physical, or behavioural (Aguilera, 1998).

After an individual has been identified as being in crisis, the next step is to ensure the individual's safety (Sandoval, 2002). Safety refers to both physical and psychological safety and involves minimizing danger to self and others (James & Gilliland, 2005). This can be completed through the use of assessment of the individual's potential for suicide and/or homicide. Ensuring the safety of the individual is paramount and must be addressed either directly or indirectly when engaging in crisis intervention. Following this, the third step in crisis intervention is employed which involves providing support to the individual (James, 2007).

Support in crisis intervention takes the form of interpersonal communication between the worker and the individual. It involves providing an atmosphere of acceptance, support, and calmness and communicating with the individual through verbal and non verbal means, including physical contact (Roberts, 2005). Providing support also necessitates the use of active listening skills in order to communicate to the individual that the social worker cares about them (James & Gilliland, 2005). This leads to the fourth step in crisis intervention which consists of examining alternatives. This refers to the exploration of coping strategies. Strategies that were used by the individual in the past are re-evaluated and the possibility of developing new coping skills is explored (Aguilera, 1998).

The fifth step involves making plans. This refers to developing a plan that will work to restore the individual's level of functioning to a pre-crisis state

(Sandoval, 2002). The plan should include a number of components including the identification of formal and informal support systems such as support groups, family, and friends. It should also include the recognition of effective coping strategies and problem solving skills that can be used by the individual during the course of the crisis (James, 2007). The development of this plan leads to the sixth and final phase of crisis intervention. In the final phase of crisis intervention, assistance is provided with making realistic plans for the future that address any current issues and potential future crises (Aguilera, 1998). The individual is also encouraged to continue to use the coping strategies learned through the course of intervention. Information is also provided regarding available resources and other systems of support available to the individual (Sandoval, 2002).

This practicum placement provided opportunities to utilize some of these crisis intervention skills as I engaged with individuals and families in the Emergency Room. It was necessary that the social worker be available to the family of those individuals who were admitted to the hospital under traumatic circumstances. Crisis intervention usually took the form of providing practical and emotional support to the family. This included contacting family members regarding their loved one, greeting the family once they arrived at the hospital, and escorting them to a private room. Support also involved acting as the intermediary between the primary health care professionals and the family and providing the

family with updates on their loved one's condition. Support also took the form of providing information on other supports within the hospital such as the hospital chaplain or the aboriginal liaison worker and ensuring the family had access to food, water, and/or coffee. The social worker also provided support by sitting with the family and listening to stories and fond memories about their loved one. Support would continue with the family throughout the course of the crisis and in the aftermath of the crisis, regardless of the outcome to ensure that problems related to the crisis do not develop.

Interpersonal Communication

The practicum placement also provided an opportunity to develop and enhance both verbal and non verbal interpersonal communication skills. Interpersonal communication refers to the ability to relate to other people through communication. It usually occurs during face to face interactions and consists of two types of communication: verbal and non verbal (Adler, Towne, & Rolls, 2001). Verbal communication refers to spoken words whereas non verbal communication refers to gestures, body language, tone of voice, and facial expressions (Adler, Towne, & Rolls, 2001). However, interpersonal communication also involves skills such as active listening, including summarizing and paraphrasing, and questioning (Shebib, 2003). In social work, these skills are used to assist with listening, talking, and conflict resolution with the goal of developing working relationships with

individuals and families. The opportunity to work with many different individuals and families, possessing a range of diverse issues enabled me to improve my interpersonal communication skills.

The practicum placement worked to provide a setting where I could utilize and improve upon my verbal and non verbal interpersonal communication skills. My verbal interpersonal communication skills were improved through the addition of new verbal responses to my inventory of possible responses that could be used in a given situation. My non verbal interpersonal communication skills were also improved upon as I had the opportunity to use the skills more frequently and with increasing success.

The practicum placement also enabled me to improve my active listening skills and more specifically my ability to summarize and paraphrase when working with individuals and families. Summarizing and paraphrasing represent two ways in which to clarify and simplify the information gathered through active listening (Shebib, 2003). Paraphrasing involves restating the ideas and words that the individual or family has expressed in your own words whereas summarizing is a way of confirming understanding of the information provided and clarifying assumptions (Shebib, 2003). The practicum placement enabled me to enhance my ability to summarize and paraphrase through continuous execution, repetition, and application of the skills.

The practicum placement also provided me with an opportunity to engage in effective and purposeful questioning. There are three types of questions that can be used when engaging in interpersonal communication with individuals and families; open questions, closed questions, and indirect questions (Shebib, 2003). The opportunity to engage in interpersonal communication with individuals and families worked to increase my skill level in using open and direct lines of questions rather than closed questions, which yield less detailed information. This worked to increase my capacity to learn information about individuals and families accurately and efficiently.

Crisis Theory and Therapeutic Treatments

The practicum placement also provided an opportunity to complete background readings on crisis theory and therapeutic treatments. Background readings were completed on crisis theory and the recommended treatment approaches for specific crises using the text by Richard James and Burl Gilliland entitled *Crisis Intervention Strategies* (5th Ed.). These readings were supplemented at a later date. For the purposes of this report, the recommended treatment approach used with individuals who experienced the sudden death of a spouse is described.

Crisis can be defined generally as "a perception of experiencing of an event or situation as an intolerable difficulty that exceeds the person's current resources and coping mechanism" (James & Gilliland, 2005, p.3). It represents a common human

condition that can present itself in varying degrees of intensity depending on the situation that an individual struggles with. It is characterized by disequilibrium and disorientation and the inability to utilize familiar and common coping strategies (James, 2007). The individual usually experiences anxiety and tensions and strong and conflicting emotions that can lead to illogical and confused thinking. In short, the stress of a crisis upsets the balance between thoughts, feelings, and behaviour (Payne, 2005). The fundamental task then, is to restore the confidence of an individual in their coping abilities as well as to provide the possibility of new coping mechanisms.

There are three main theories of crisis which include basic crisis theory, expanded crisis theory, and applied crisis theory. Basic crisis theory is based on the work of Lindemann (1944, 1956) who focused on loss and grief (as cited in James & Gilliland, 2005). He identified crisis as consisting of three distinct stages: (1) a period of disequilibrium, (2) a process of working through the problems, and (3) an eventual restoration of equilibrium (James & Gilliland, 2005). Initially, this theory related only to crisis resulting from loss and grief. However, it has since evolved and is used as a crisis theory in relation to an array of traumatic events that are experienced by people (James, 2007).

Expanded crisis theory, on the other hand, merges the key concepts of systems, psychoanalytic, adaptation, chaos, and interpersonal theories and in turn

has created a new way of viewing crisis (James, 2007). Expanded crisis theory moves away from an individual focus to an understanding of crisis through the lens of interpersonal relationships and life events. It takes into consideration the social, environmental, and situation factors surrounding the event that make it a crisis (James & Gilliland, 2005). Possible interventions are also reconsidered in expanded crisis theory to include the adoption of adaptative behaviours, the development of confidence and self-actualization, and the potential for growth and change.

Applied crisis theory, conversely, is comprised of four types of crisis; developmental crisis, situational crisis, existential crisis, and environmental crisis (James, 2007). Developmental crises are events that occur in the course of human growth and development and could include the birth of a child, puberty, and death and dying. These types of crises are considered normal and part of life although the way in which each person reacts to the event can be different and varied (James & Gilliland, 2005). Situational crises, on the other hand, are events that occur unexpectedly and are unusual in nature and could include a traumatic event such as a motor vehicle incident or a violent or sexual assault (James & Gilliland, 2005). Existential crisis, conversely, refers to internal conflicts and anxieties, which are a result of human issues such as purpose, responsibility, and autonomy (James, 2007). This can include events related to middle life crisis. Environmental crises, alternatively, refers to events that impact on a person's environment and cause

undue anxieties (James & Gilliland, 2005). These events can be man-made or natural and can include floods, hurricanes, and earthquakes.

Crisis theory, expanded crisis theory, and applied crisis theory are the three main theories of crisis utilized when completing assessments and selecting appropriate therapeutic approaches (James & Gilliland, 2005). The therapeutic approach selected also depends on the event that precipitated the crisis. For the purposes of this report, a therapeutic approach to the crisis associated with the sudden death of a spouse will be addressed. The type of therapeutic approach to the sudden death of a spouse involves a series of interventions (James, 2007). The first step is to engage in immediate crisis intervention. Immediate crisis intervention in this type of situation involves dealing with the immediate practical necessities of the individual's death including helping the individual with contacting family members, making decisions regarding organ donation, and making funeral arrangements (James, 2007). Immediate crisis intervention also involves the continuous assessment of the individual for indications of impaired coping ability.

The second step of the therapeutic approach is to engage in individual counseling with the individual (James & Gilliland, 2005). The purpose of this is to address issues of loneliness and grief and identify and deal with any areas of weakness that the individual is experiencing as a result of the death of a spouse. This also provides the individual will the tools needed to cope effectively with the

loss and move forward with their life (James, 2007). The final step involves referral to a survivor support group which works to address the implications of the death of a spouse on their social connections. This provides an opportunity for the individual to discuss their loss and grief with other survivors who have also recently experienced the death of a spouse (James, 2007). These three steps form the basis of one therapeutic approach that can be used with individuals experiencing crisis as a result of the sudden death of a spouse.

Documentation

This practicum placement also provided further instruction in regards to appropriate documentation. Documentation in health care settings takes the form of progress notes. Progress notes represent a written record of the interaction between the social worker and the individual and family. It contains several elements including pertinent information regarding the individual, the purpose of the interaction, a description of the interaction, and any outcomes or follow up that is required. In this case, progress note forms were provided by the Social Work department. These forms required several pieces of identifying information including a stamp which contained their name, birth date, care card number, and date and time of admission to the hospital. These forms also required the individual's address and phone number, the name and contact information for their next of kin, and their medical diagnosis. The forms also requested information

regarding the date of referral to the social worker and who the individual was referred by as well as the reason for the consultation. The rest of the form was dedicated to the description of the interaction and any outcomes or follow up that was required. It is also important to include information gathered as a result of contact with family members, friends, or community and hospital based resources. It is also important to include any observations and analytical thoughts regarding what happened in the interaction and a summary of the social worker's impressions about the interaction.

Research Component

The practicum placement also provided me with an opportunity to employ the quantitative research skills that I had gained through my participation in the Master of Social Work course work. I chose to complete quantitative research that focused on personal injury motor vehicle incidents and the development of adverse stress reactions. The following section consists of a description of the research that I completed while carrying out my practicum placement at the Prince George Regional Hospital.

Chapter Three: Research Component

Problem Statement

As previously noted, there were 50 573 traffic collisions reported in BC in 2005 with 28 752 resulting in personal injuries; approximately 79 people per day (British Columbia Motor Vehicle Branch, 2005). A significant percentage of individuals develop adverse stress reactions following a personal injury MVI that if undetected could develop into a more serious problem; namely post traumatic stress disorder. As mentioned earlier, a great deal of research has been conducted on the development of psychological symptoms and emotional issues in severely physically injured individuals and those receiving medical treatment following the incident (Blanchard et al., 1995; Gordon et al., 1996, as cited in Jeavons, Greenwood, & Horne, 2000; Green et al., 1993, as cited in Jeavons, Greenwood, & Horne, 2000; Mayou, Bryant, & Duthie, 1993 as cited in Jeavons, Greenwood, & Horne, 2000). However, it is also necessary to assess those individuals who experience relatively minor injuries as they may also experience significant psychological and emotional symptoms and issues (Jeavons, Greenwood, & Horne, 2000). Taking into consideration the symptomology of adverse stress reactions and PTSD and the consequences associated with a PTSD diagnosis, it appears that preliminary assessment of all personal injury MVI victims is necessary and appropriate. The goal of this research study was to determine the percentage of individuals who

demonstrated adverse stress reactions following a personal injury MVI. If it was determined that the percentage of individuals demonstrating adverse stress reactions was between 6.5 to 39 percent, this could promote the use of a preliminary screening of all individuals involved in personal injury MVI. This in turn could aid in the early identification of those individuals who may be experiencing symptoms of PTSD.

Methodology

Operational Definition of Terms

The operational definitions of terms for the study were as follows:

Adverse stress reactions – In this study, adverse stress reactions refers to any sort of stress reaction which negatively impacts an individual's life at some level.

Personal injury motor vehicle incident – In this study, personal injury motor vehicle incident refers to any motor vehicle incident or other road vehicle collision occurring on a roadway, which results in injury, but not death to one or more persons.

Specific Research Questions

The specific research questions for the study were as follows:

1. What percentage of individuals demonstrate adverse stress reactions, as determined by the Impact of Event Scale – Revised,

symptoms, and hyperarousal symptoms of PTSD as outlined in the DSM-IV-TR. Participants were asked to rate each item in the IES-R on a scale of 0 (not at all), 1 (a little bit), 2 (moderately), 3 (quite a bit), and 4 (extremely) according to the past seven days (Weiss & Marmar, 1997). The IES-R yields a total score ranging from 0-88 and subscale scores can also be calculated for avoidance, intrusive, and hyperarousal subscales. Each item in the IES-R corresponds to one of the three subscales; avoidance, intrusive, and hyperarousal (Weiss & Marmar, 1997). The IES-R is not used to diagnose PTSD. However cutoff scores for a preliminary diagnosis of PTSD or adverse stress reactions have been cited in other literature (Wu & Chan, 2004). The total score of the IES-R will determine whether or not an individual was demonstrating adverse stress reactions (Weiss & Marmar, 1997). The mean score of the items designated to each subscale determines whether or not an individual was demonstrating avoidance, intrusive, or hyperarousal symptoms.

The internal reliability of the three subscales (avoidance, intrusive, and hyperarousal) within the IES-R have been found to be very high with intrusive alphas ranging from .87 to .92, avoidance alphas ranging from .84 to .86, and hyperarousal alphas ranging from .79 to .90 (Weiss & Marmar, 1997). The test-retest correlation co-efficient for the subscales have also been found to be high when the interval between assessments is short and the recency of the traumatic event is greater (Weiss & Marmar, 1997). It has also been noted that the hyperarousal

subscale has good predictive validity with regard to trauma (Briere, 1997) and that the intrusive and avoidance subscales have been shown to detect change in participants' clinical status over time and detect relevant difference in the response to traumatic events of varying severity (Weiss & Marmar, 1997; Horowitz, Wilner, & Alvarez, 1979).

Sampling and Data Collection

A non experimental research design was used in this research study. A non experimental research design was utilized due to the fact that the participants were not randomly assigned and there was no manipulation of an independent variable. Ethically, random sampling was not possible in this research study as it would have potentially limited access by individuals with adverse stress reactions to necessary services. Therefore, all of the individuals involved in a personal injury MVI who present to the Emergency department at Prince George Regional Hospital had the opportunity to self-administer the IES-R, if they desired. Furthermore, if the total score of the IES-R determined that an individual was demonstrating adverse stress reactions they would immediately receive an appropriate referral to crisis intervention services that provided suitable treatment. It is unethical to deny treatment to individuals who need it and want it. Appropriate referrals included but were not limited to the Insurance Corporation of BC, the Workers Compensation Board, and private practice clinicians. We were prepared to assist with referral to

appropriate services. However, we did not pay for any private counseling sessions. There are mental health services offered through public and private organizations and associations within the community of Prince George. However, there were limitations in some of the outlying communities. Therefore, those participants who lived in outlying communities outside the community of Prince George were provided with an appropriate referral that was best suited to the needs of the participant and their geographical location.

The research study also did not involve any kind of intervention between the first self-administered IES-R and the second self-administered IES-R. Therefore, there was no manipulation of an independent variable in this research study. However, as noted above, if it was determined from the IES-R score, that an individual required services or treatment, they were immediately provided with an appropriate referral to crisis intervention services that provided suitable treatment.

Procedure

Those individuals involved in a personal injury MVI who presented to the Emergency department at Prince George Regional Hospital were approached by a Quick Response worker and informed of the research study being conducted. Individuals were asked whether or not they would be willing to participate in the research study. The Quick Response worker provided an Informed Consent Package to the individual which outlined the purpose of the research project; the

time commitment requested; the nature of the participation; information regarding files, records, and confidentiality; the potential costs, harms, and benefits of participation; the right to withdraw; information regarding free and informed consent; and information regarding final reports and results. If the individual agreed to participate in the research study, the individual signed the Informed Consent Package and contact information was collected from the individual.

A Quick Response worker provided those individuals admitted to Prince George Regional Hospital with the IES-R, within the first week following presentation to the Emergency department. A Quick Response worker also collected the self-administered IES-R. Those individuals presented to the Emergency department but not admitted to the Prince George Regional Hospital were provided the IES-R through regular mail, to be self-administered within the first week following presentation to the Emergency department. These participants were also provided with a return envelope including postage. Both groups of participants were provided with a second IES-R to be completed one month following presentation to the Emergency department at Prince George Regional Hospital. The second IES-R was delivered to the participants either directly or through regular mail approximately 3.5 weeks following presentation to the Emergency department. Individuals were contacted by phone to confirm receipt of the IES-R via mail.

Ethical Considerations

All of the individuals who agreed to become involved in the research study were asked to read and sign an informed consent package. This informed consent package signaled their decision to voluntarily participate in the research study. It was made clear to the individual that they could withdraw their participation in the research study at any time without in any way impacting on the services available to them through the Quick Response Program or Prince George Regional Hospital. Again, if during the course of the study or following it, it was determined that an individual required services or treatment, they received an appropriate referral for crisis intervention services that provide suitable treatment.

An MSW-trained on-site investigator also aided in identifying those individuals who may require additional support and supervised the research study and the scoring of the IES-R. Furthermore, the Northern Interior Research Review Committee at the Northern Health Authority and the University of Northern BC Research Ethics Board reviewed this research study and approval was obtained.

Data Analysis

The IES-R score of each respondent was taken following the first and second administration of the self-report measure. Using the scoring information, it was determined whether or not the respondent was demonstrating adverse stress reactions following a personal injury MVI at each point in time. As previously

noted, cutoff scores for the IES-R for a preliminary diagnosis of PTSD have been cited in the literature (Wu & Chan, 2004). The IES-R yields a total score (ranging from 0 to 88) and subscale scores can also be calculated for the avoidance, intrusive, and hyperarousal subscales. It was recommended using means instead of raw sums for each of the subscales scores as well (Weiss & Marmar, 1997). In this research study, an individual was determined to be demonstrating adverse stress reactions if the total score was above 31 (moderately). An individual was determined to be demonstrating avoidance, intrusive, or hyperarousal symptoms if the mean score of the corresponding subscale was above 2 (moderately).

The number of participants demonstrating adverse stress reactions following the first administration was divided by the total number of participants in order to determine the percentage of individuals demonstrating adverse stress reactions one week following a personal injury MVI. This was also completed following the second administration of the IES-R. The number of participants demonstrating avoidance, intrusive, and hyperarousal symptoms following the first administration was also divided by the total number of participants in order to determine the percentage of individuals demonstrating each of the subscales. Again, this was completed following the second administration as well.

Results

Table 1.

Total IES-R Scores – One Week following Personal Injury MVI

Participant	Total IES-R Score
001	55
002	4
003	59
004	37
005	47
006	13
007	54
008	36

Table 2.

Total IES-R Scores – One Month following Personal Injury MVI

Participant	Total IES-R Score
001	44
002	1
003	62
004	22
005	30
006	7
007	41
008	21

Table 3.

Total IES-R Scores – Percentage of Participants indicating Adverse Stress Reactions

	N	Number of participants indicating ASR[a]	Percentage of participants indicating ASR[a]
One Week	8	6	0.75 or 75%
One Month	8	3	0.375 or 37.5%

[a] ASR refers to adverse stress reactions

Table 4.

Mean Scores of Subscales – One Week following Personal Injury MVI

Participant	Mean Scores of Subscales		
	Avoidance	Intrusive	Hyperarousal
001	2.125	2.500	3.000
002	0.125	0.250	0.167
003	1.375	3.875	2.833
004	0.750	3.000	1.167
005	1.125	2.875	2.500
006	0.500	0.750	0.500
007	1.500	3.375	2.500
008	0.875	2.625	1.333

Table 5.

Mean Scores of Subscales – One Month Following Personal Injury MVI

Participant	Mean scores of subscales		
	Avoidance	Intrusive	Hyperarousal
001	1.500	2.500	2.000
002	0.000	0.125	0.000
003	1.375	3.500	3.833
004	0.375	1.750	0.833
005	0.875	1.500	1.833
006	0.250	0.375	0.333
007	1.125	2.625	1.833
008	0.625	1.625	0.500

Table 6.

Mean Scores of Subscales – Number of Participants indicating Adverse Stress Reactions

	N	Number of participants indicating ASD[a]		
		Avoidance	Intrusive	Hyperarousal
One week	8	1	6	4
One month	8	0	3	2

[a] ASR refers to adverse stress reactions

Table 7.

Mean Scores of Subscales – Percentage of Participants indicating Adverse Stress Reactions

	N	Percentage of participants indicating ASD[a]		
		Avoidance	Intrusive	Hyperarousal
One week	8	0.125 or 12.5%	0.75 or 75%	.50 or 50%
One month	8	0.000 or 0%	0.375 or 37.5%	0.25 or 25%

[a] ASR refers to adverse stress reactions

Discussion

The research study examined the usefulness of preliminary screening for adverse stress reactions for individuals involved in personal injury MVIs. The IES-R self report measure was administered twice; one week and one month after the personal injury MVI. The research found that 79 percent of the participants did experience adverse stress reactions one week following the personal injury MVI. However, this percentage decreased to 37.5 percent one month following the personal injury MVI. This proved to be a 50 percent decrease in adverse stress reactions between the administration of the two self report measures. The research also found that 12.5 percent of participants experienced avoidance adverse stress reactions, 75 percent of participants experienced intrusive adverse stress reactions, and 50 percent of participants experienced hyperarousal symptoms one week following the personal MVI. These percentages also decreased to 0 percent (avoidance), 37.5 percent (intrusive), and 25 percent (hyperarousal) one month following the personal injury MVI. This proved to be 100 percent (avoidance) and 50 percent (intrusive and hyperarousal) decrease in specific adverse stress reactions between the administrations of the two IES-R measures.

As previously noted, past literature has shown that 6.5 to 39 percent of those individuals involved in a personal injury MVI will develop PTSD. With this in mind, it could be said that a substantial percentage of the individuals involved in

this small research study did experience immediate adverse stress reactions. It could also be said that a considerable proportion of the individuals also experienced adverse stress reactions one month following the traumatic event, despite the decrease by 50 percent. It could also be said that this research study has shown that intrusive and hyperarousal symptoms were the most common adverse stress reactions experienced over avoidance adverse stress reactions, both one week and one month following the personal injury MVI. Taking into consideration the findings of this study it could be argued that a preliminary screening of all individuals involved in personal injury MVIs should be completed. This in turn could aid in the early detection of those individuals who may be experiencing symptoms of PTSD. However, there were limitations to the generalizability of this research as the sample population was quite small. Therefore, it is recommended that further research be completed with a larger sample size to determine generalizability to the greater population.

Limitations

This research study was not without limitations. For instance, although the study was able to determine the percentage of individuals involved in a personal injury MVI who experience adverse stress reactions, it was not able to determine which individuals were suffering from PTSD. This is due to the fact that the IES-R was only used as a screening tool, and not a diagnostic tool. However, this study

was able to aid in the identification of individuals who may be experiencing adverse stress reactions that could, if undetected, develop into a more serious problem; namely PTSD. Those individuals who received a total score above 31 on the IES-R were provided with an appropriate referral for crisis intervention services that provided suitable treatment for adverse stress reactions and PTSD. A total of six individuals received a score above 31 on the EIS-R and were identified as possibly experiencing adverse stress reactions.

Another limitation was the unpredictability of the sample size. It was not clear at the onset of the study how many individuals would be involved in a personal injury MVI within the research study time period. Furthermore, it was unclear how many of those individuals would agree to participate in the study. Initially, the study was to be completed in the summer months but it was found that few individuals involved in personal injury MVIs were presenting at the Prince George Regional Hospital. Therefore, the study was continued in the winter months as well. It was also found that some individuals who did present to the ER were either too severely injured to be considered for the study or were released immediately before the Quick Response worker could speak with them about the study. It was also found that some individuals were unable to participate in the study due to their inability to give informed consent. This was in some cases due to

alcohol or drug use detected after admittance to the Prince George Regional Hospital.

Another limitation was the procedure used to gather the completed IES-R. Specifically, there was a concern regarding the use of a return envelope for the return of the completed IES-R. It proved to be quite difficult to ensure that the first and second EIS-R was returned to the Quick Response worker when self-administered outside of the Prince George Regional Hospital. In most cases, especially in regards to the second self administration of the IES-R, many of the individuals failed to return the self-report measure. This limited the number of scores that could be used in the data analysis and hence limited the ability of the study to be generalized.

A final limitation refers to the research design itself. The research design was not experimental. Therefore, the study did not include randomization or the manipulation of an independent variable. Furthermore, the individuals will receive the exact same assessment tool twice and this could result in testing effects issues, which could in turn skew the results of the research study.

Future Directions

As previously noted, the purpose of this research study was to determine the usefulness of preliminary screening for adverse stress reactions for personal injury MVI victims. The research found that a large percentage of the individuals who

participated in this research study did experience adverse stress reactions; both immediately after the traumatic event and one month following the MVI. Therefore it could be been argued that a preliminary screening of all individuals involved in a personal injury MVI be undertaken as this could aid in the detection of those individuals involved in personal injury MVIs who may be demonstrating symptoms of PTSD. Furthermore, this could work to alleviate the consequences of PTSD. Again more research is needed to adequately address this issue and it is recommended that more research be completed with a larger sample size to determine the generalizability of the results found in this study.

Conclusion

Primary health care reforms have permitted the introduction of universal access to multidisciplinary health care professionals and improved access to health care in non traditional settings. As a result, social workers have been afforded the opportunity to engage with individuals and families in primary health care settings, including local hospitals. Social workers working within primary health care settings perform a wide range of duties and fulfill a number of diverse and unique roles with the goal of improving the overall health and social well being of individuals and families. Some of these roles include counseling and crisis intervention, community development and capacity building, discharge planning, advocacy and liaison, information and referral, and assisting individuals and families obtain basic human needs. Although crisis intervention represents only one of the roles that social workers engage in, it is an important role when working with individuals and families who have experienced a traumatic event. There are several different types of traumatic events that can impact on an individual's or family's ability to cope. Personal injury motor vehicle incidents represent one type of traumatic event and the adverse stress reactions that can develop following this type of event can be problematic.

As previously noted, 50 573 traffic collisions were reported in BC in 2005. As a result of these traffic collisions 28 752 individuals were reported to suffer personal

injuries; approximately 79 people per day (British Columbia Motor Vehicle Branch, 2005). A considerable proportion of those individuals involved in personal injury motor vehicle incidents develop adverse reactions as a result of the traumatic event (Blanchard & Hickling, 2004; Blanchard et al., 2004; Brom, Kleber, & Hofman, 1993; Bryant & Harvey, 1996; Buckley, Blanchard, & Hickling, 1996; Butler & Moffic, 1999; Ehlers, Mayou, & Bryant, 1998; Jeavons, Greenwood, & Horne, 2000; Kuch, Cox, & Evans, 1996; Kuhn, Blanchard, & Hickling, 2003; Mayou, 2002; Paylo & Beck, 2005). If this condition remains undetected, the individual could develop a more serious condition; specifically post traumatic stress disorder (Blanchard & Hickling, 2004; Bryant & Harvey, 1996; Buckley, Blanchard, & Hickling, 1996; Butler & Moffic, 1999; Ehlers, Mayou, & Bryant, 1998; Jeavons, Greenwood, & Horne, 2000; Kuch, Cox, & Evans, 1996; Kuhn, Blanchard, & Hickling, 2003). PTSD is marked by an assortment of debilitating and incapacitating symptoms and can result in a variety of biological, psychological, and social consequences. In view of the symptomology of adverse stress reactions and PTSD and the consequences associated with a PTSD diagnosis, it is maintained that the preliminary assessment of personal injury MVI victims is necessary and appropriate in order to determine whether adverse stress reactions are present. This in turn could aid in the early detection of those individuals who may be experiencing symptoms of PTSD.

The majority of the research that has been conducted on post traumatic stress disorder and the development of psychological symptoms and emotional issues has focused on individuals who were severely physically injured in an MVI (Blanchard et al., 1995; Gordon et al., 1996, as cited in Jeavons, Greenwood, & Horne, 2000; Green et al., 1993, as cited in Jeavons, Greenwood, & Horne, 2000; Mayou, Bryant, & Duthie, 1993 as cited in Jeavons, Greenwood, & Horne, 2000). The primary researcher maintains that it is necessary to assess those individuals who suffer minor physical injuries as well as they may also develop significant psychological symptoms and emotional issues. The research presented focused on those individuals involved in MVIs who suffered only minor injuries and aimed to determine the percentage of individuals who demonstrate adverse stress reactions. It was found that a large percentage of the individuals involved in this small research study did experience immediate adverse stress reactions. It was also found that a considerable percentage of these individuals experienced adverse stress reactions one month following the traumatic event. The research that was completed was not without limitations. However, it could be argued that a preliminary screening of all individuals involved in personal injury MVIs should be completed. This could effectively aid in the early identification of PTSD, as well as further establish the role of social work in health care settings.

Social workers working within health care settings could actively participate in the administration and delivery of preliminary assessments to those individuals involved in personal injury MVIs. Utilizing the Impact of Event Scale-Revised, social workers could be instrumental in identifying those individuals who are experiencing adverse stress reactions following a personal injury MVI, both immediately following the event and one month after. This could aid social workers in the detection of possible PTSD symptoms and enable them to provide necessary and appropriate referrals to community resources that can provide suitable treatment. This could also work to further entrench and reinforce the role of the social worker in health care settings and provide additional opportunities for interaction with individuals and families.

Through my practicum placement at the Quick Response Program at the Prince George Regional Hospital, I was afforded the opportunity to engage in social work practice within a primary health care setting and more importantly to engage in multidisciplinary social work practice. The practicum placement also afforded me the opportunity to develop the skills necessary to work with a variety of different individuals and families and the opportunity to perform a number of varied and distinct roles. This included an opportunity to engage in crisis intervention and to engage with individuals who have experienced a personal injury motor vehicle incident. The practicum placement also provided me with the opportunity to

engage in research and utilize my research and investigative skills. Overall, this practicum placement enriched my graduate studies experience and provided me with the tools to engage in meaningful and significant social work practice.

In conclusion, this practicum report provided a brief overview of the literature focusing on a number of different yet interrelated topics including the impact of primary health care reforms on the profession of social work, the roles that social workers engage in when working in primary health care settings, and crisis intervention and personal injury motor vehicle incidents. This practicum report also provided a brief description of the practicum placement at the Quick Response Program at the Prince George Regional Hospital and provided detailed information on the practicum learning objectives achieved. This included a brief description of the research that was completed during the course of the practicum placement focusing on personal injury motor vehicle incidents and adverse stress reactions.

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Appendices

Appendix A

Impact of Event Scale-Revised

Instructions: Below is a list of difficulties people sometimes have after stressful life events. Please read each item and then indicate how distressing each difficulty has been for you DURING THE PAST SEVEN DAYS with respect to _____, how much were you distressed or bothered by these difficulties?

	Not at all	A little bit	Moder-ately	Quite a bit	Extremely
1. Any reminder brought back feelings about it.	0	1	2	3	4
2. I had trouble staying asleep.	0	1	2	3	4
3. Other things kept making me think about it.	0	1	2	3	4
4. I felt irritable and angry.	0	1	2	3	4
5. I avoided letting myself get upset when I thought about it or was reminded of it.	0	1	2	3	4
6. I thought about it when I didn't mean to.	0	1	2	3	4
7. I felt as if it hadn't happened or wasn't real.	0	1	2	3	4
8. I stayed away from reminders about it.	0	1	2	3	4
9. Pictures about it popped into my mind.	0	1	2	3	4
10. I was jumpy and easily startled.	0	1	2	3	4
11. I tried not to think about it.	0	1	2	3	4
12. I was aware that I still had a lot of feelings about it, but I didn't deal with them.	0	1	2	3	4
13. My feelings about it were kind of numb.	0	1	2	3	4
14. I found myself acting or feeling like I was back at that time.	0	1	2	3	4
15. I had trouble falling asleep.	0	1	2	3	4
16. I had waves of strong feelings about it.	0	1	2	3	4

	Not at all	A little bit	Moder-ately	Quite a bit	Extremely
17. I tried to remove it from my memory.	0	1	2	3	4
18. I had trouble concentrating.	0	1	2	3	4
19. Reminders of it caused me to have physical reactions, such as sweating, trouble breathing, nausea, or a pounding heart.	0	1	2	3	4
20. I had dreams about it.	0	1	2	3	4
21. I felt watchful and on-guard.	0	1	2	3	4
22. I tried not to talk about it.	0	1	2	3	4

Impact of Event Scale - Revised

Scoring Information

Avoidance Subscale = mean of items 5, 7, 8, 11, 12, 13, 17, 22

Intrusion Subscale = mean of items 1, 2, 3, 6, 9, 16, 20

Hyperarousal Subscale = mean of items 4, 10, 14, 15, 18, 19, 21

Assessing Psychological Trauma and PTSD
A Handbook for Practitioners
Chapter 15: The Impact of Event Scale-Revised
by Daniel S. Weiss, PhD
& Charles R. Marmar, MD
Department of Psychiatry, University of California, San Francisco
& PTSD Program, San Francisco VA Medical Center

Correspondence to Dr. Weiss
UCSF Box 0984
Department of Psychiatry
San Francisco, CA 94143-0984
Tel: (415) 221-4810x3080
Fax: (415) 750-6921

In J.P Wilson, & T.M. Keane (eds.), Assessing psychological trauma and PTSD: A Practioner's Handbook. New York: Guilford.

Appendix B

INFORMED CONSENT PACKAGE

The Impact of Personal Injury Motor Vehicle Accidents: The Development of Adverse Stress Reactions

Research Team:

Karen Payton, B.A., M.S.W. (Candidate) – Principle Investigator
Graduate Student, Social Work Program, University of Northern British Columbia
3333 University Way, Prince George, BC V2N 4Z9
(250) 613-1576
paytonk@unbc.ca

Brent Goerz, M.S.W., R.S.W. – On-Site Investigator
Quick Response Social Worker, Prince George Regional Hospital
1475 Edmonton Street, Prince George, BC V2M 1S2
(250) 565-2281
brent.goerz@northernhealth.ca

Glen Schmidt, B.A., B.S.W., M.S.W., R.S.W., PhD. – Project Supervisor
Associate Professor, University of Northern British Columbia
3333 University Way, Prince George, BC V2N 4Z9
(250) 960-6519
schmidt@unbc.ca

TO _____.

As a client at Prince George Regional Hospital, **you have been invited to participate in a research project**.

Purpose of the Research Project

This research study is designed to explore the development of adverse stress reactions following a personal injury motor vehicle accident. In other words, we want to see what percentage of individuals involved in personal injury motor vehicle accidents develops significant stress reactions following the event.

Time Commitment Requested

You will be asked to complete one questionnaire/scale designed to measure the presence of adverse stress reactions following a personal injury motor vehicle accident. There are 22 questions that you will answer on your own at two points in time: one week and one month following your presentation to the Emergency department at Prince George Regional Hospital.

Nature of Participation

We will ask you to complete one questionnaire/scale, at two points in time: one week and one month following your presentation to the Emergency department at Prince George Regional Hospital. The questionnaire/scale is to be self-administered and will either be hand delivered or

mailed to you. The questionnaire/scale that you will complete is called the Impact of Event Scale-Revised (IES-R). The questionnaire/scale will determine whether or not you are demonstrating adverse stress reactions as a result of a personal injury motor vehicle accident.

Files, Records and Confidentiality

The research project notes, such as your results on the questionnaire/scale (Impact of Event Scale – Revised) will be recorded and will not contain any identifying features. A record of your responses/results on the questionnaire/scale will be maintained until the data collection and analysis are complete in October of 2005, and then the records of participants will be shredded. Only the group results (all participants' results together) will be retained and no identifying features will be provided. In other words, no one will be able to identity which participant gave a particular response. The group results, which will be presented in numbers, will be analyzed, and discussed in the Final Report. The Final Report will not identify individual participants in any way.

Potential Costs, Harms and Benefits of Participation

There is no cost to you to participate in this project, nor any payment of any monies to you. Benefits to you may include the advantage of early detection of adverse stress reactions following a personal injury motor vehicle accident, and in turn an appropriate referral regarding suitable services or treatment in order to alleviate the presence of adverse stress reactions. In other words, if it is determined from the IES-R that you require services or treatment, you will immediately receive an appropriate referral that will provide suitable services or treatment to you. However, participants who do not receive a referral should not assume that they do not have or will not develop adverse stress reactions. An appropriate referral could include but is not limited to the Insurance Corporation of BC, the Workers Compensation Board, and private practice clinicians. We will assist with referral to appropriate services. However, we will not be paying for any private counseling services. The city of Prince George offers many mental health services and most the outlying communities have mental health services available as well. However, there are limitations. Therefore, those participants who live in outlying communities outside of Prince George will be provided with an appropriate referral that is best suited to the needs of the participant and their geographical location.

Unlimited Right to Withdraw

You have the right to withdraw at any time during the process. No penalty can result to you, and you will be welcome to attend other regular services at Prince George Regional Hospital regardless of your withdrawal from this research project. We want you to know that choosing not to participate in this project will not affect any medical or other health care services you receive or may receive in the future.

Free and Informed Consent

If you decide to participate, your signature of consent is required at the end of this document. Additionally, we ask that you initial each page that you have read this form entirely. A completed questionnaire is evidence of consent, and its inclusion in the feedback record is assumed. All project data collected is the property of the researchers. Data collected from a participant who chooses to withdraw will be included up to the point of withdrawal. No tapes, video or audio, will be made.

Conflict of Interest

The researchers are aware of no conflicts of interest on their part, apparent, actual or potential, in regard to this project.

Final Reports and Results

Publication and/or commercialization of findings: The researchers reserve the right to create academic reports or articles about the research project, while abiding to the commitment to preserve individual anonymity of all respondents. In plain language, this means that the research team may write an article for a class, a report for partial completion of graduation requirements or a journal article for publication about the subject of the research, but each researcher guarantees that your personal confidentiality will be safe.

You may ask for a copy of the materials resulting from this project. Please call Karen Payton at (250) 613-1576.

Authentication

If you have any questions and/or complaints regarding this project, you may call:

Brent Goerz, M.S.W., R.S.W. – On-Site Investigator
(250) 565-2281

Glen Schmidt, B.A., B.S.W., M.S.W., R.S.W., PhD. – Project Supervisor
(250) 960-6519

Max Blouw, PhD. - Vice President (Research)
(250) 960-5820

If you have any questions:
Any other questions about this project may be directed to Karen Payton at (250) 613-1576.

I have read and understood the contents of this invitation to participate in research. I freely give my informed consent:

Participant:

_____ _____
Name (please print) Date

_____ _____
Signature Address

_____
Phone Number

Witness: (CANNOT BE A HOSPITAL EMPLOYEE)

_____ _____
Name (please print) Date

_____
Signature

Appendix C

The Impact of Personal Injury Motor Vehicle Accidents:
The Development of Adverse Stress Reactions

Research Team:

Karen Payton, B.A., M.S.W. (Candidate) – Principle Investigator
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Glen Schmidt, B.A., B.S.W., M.S.W., R.S.W., PhD. – Project Supervisor
Associate Professor, University of Northern British Columbia
3333 University Way, Prince George, BC, V2N 4Z9
(250) 960-6519
schmidt@unbc.ca

To Whom It May Concern:,

I would like to take this time to thank you for agreeing to participate in my research study entitled "The Impact of Personal Injury Motor Vehicle Accidents: The Development of Adverse Stress Reactions". The study asks all participates to complete one questionnaire/scale, at two points in time: one week and one month following your presentation to the Emergency department at Prince George Regional Hospital. Enclosed is a copy of the questionnaire/scale which you originally completed approximately one week following your personal injury motor vehicle accident. Please take the time to complete this questionnaire/scale a second time. Once completed, please seal the questionnaire/scale in the self addressed stamped envelope and mail back to me at your convenience. Once again, I thank you for your participation and your time.

Sincerely,

Karen Payton, B.A., M.S.W. (Candidate)

Appendix D

UNIVERSITY OF NORTHERN BRITISH COLUMBIA

RESEARCH ETHICS BOARD

MEMORANDUM

To: Karen Payton
CC: Glen Schmidt

From: Henry Harder, Chair
Research Ethics Board

Date: June 22, 2005

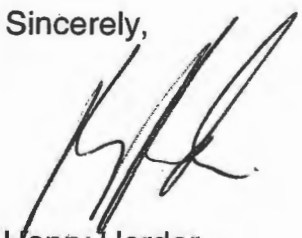
Re: E2005.0517.057
Personal injury motor vehicle accidents and adverse stress reactions

---

Thank you for submitting the above-noted research proposal and requested amendments to the Research Ethics Board. Your proposal has been approved.

Good luck with your research.

Sincerely,



Henry Harder

Appendix E

UNIVERSITY OF NORTHERN BRITISH COLUMBIA

RESEARCH ETHICS BOARD

MEMORANDUM

To: Karen Payton
CC: Glen Schmidt

From: Henry Harder, Chair
Research Ethics Board

Date: September 06, 2005

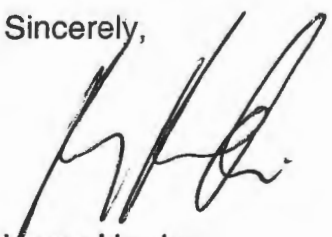
Re: E2005.0517.057
Personal injury motor vehicle accidents and adverse stress reactions

---

Thank you for submitting a request to amend your research study dates to the end of January 2006. The Research Ethics Board has reviewed and approved same.

Good luck with your research.

Sincerely,



Henry Harder

Appendix F

northern health

Prince George Regional Hospital
1475 Edmonton Street, Prince George, BC V2M 1S2
Telephone: (250) 565-2000, Fax: (250) 565-2343,

July 5, 2005

Karen Payton
44 – 7100 Aldeen Road
Prince George, BC V2N 5R5
250-964-1875
paytonk@unbc.ca
June 29, 2005

Dear Ms. Payton:

Re: Study – "Personal injury motor vehicle accidents and adverse stress reactions"

On behalf of the Northern Interior Research Review Committee, I would like to thank you for addressing the points highlighted in our last letter regarding your project titled "Personal injury motor vehicle accidents and adverse stress reactions". The committee has approved your study.

We agree that this is an important area of investigation and are happy that your project is moving forward. We would also be interested in the results of the research and would ask that you share your findings with the committee once the study is complete.

Thank you and good luck with your study.

Sincerely yours,

Dr. C. Hagen, Chair Research Review Committee PGRH

CH/ll

Appendix G

northern health

Prince George Regional Hospital
1475 Edmonton Street, Prince George, BC V2M 1S2
Telephone: (250) 565-2000, Fax: (250) 565-2343, www.northernhealth.ca

September 9, 2005

Karen Payton
44 – 7100 Aldeen Road
Prince George, BC V2N 5R5
250-964-1875
paytonk@unbc.ca

Dear Ms. Payton:

Re: Study – "Personal injury motor vehicle accidents and adverse stress reactions"

On behalf of the Northern Interior Research Review Committee please accept this letter as approval for extension on the length of the above-mentioned study as follows:
June 2, 2005 to January 30, 2006.

Thank you and good luck with your study.

Sincerely,

Ms. R. Fraser, Interim Chair NI Research Review Committee

RF/ll