DATING AND ATTACHMENT AMONG SINGLE WOMEN WITH MULTIPLE SCLEROSIS

by

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Dating and Attachment among Single Women with Multiple Sclerosis

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Abstract

The present study investigated the dating experiences of single women living with multiple sclerosis (MS). The present research used a mixed methods approach, with the quantitative component examining the role of disability severity, insecure attachment (avoidant and anxious), age, illness duration, depression, body esteem, sexual esteem, and attractiveness on dating experiences among 99 single women living with MS. Participants were recruited through MS societies in Canada and the United States. Regression analyses showed that overall, greater disability severity, longer illness duration, greater insecure attachment, lower sexual esteem and lower perceived attractiveness were predictive of worse dating experiences and more barriers to dating. Dating experiences were similar across ages. The second component of the study consisted of qualitative interviews with 12 women (half in a younger and half in an older age group), which were completed individually by telephone. The qualitative approach borrowed from a phenomenological lens and interviews were coded to explore the dating experiences of the women. Across the younger and older age groups, participants identified barriers to dating, coping strategies, negative cognitions about dating with MS, concerns regarding disclosure of MS, and impact of MS on body and sexual esteem. Some age related differences in dating were noted, such as concerns about pregnancy. The current research highlights the importance of conducting further research into the impact of MS on dating and in exploring potential

interventions to help support women many of whom endorsed encountering various barriers to

dating when living with MS.

Dedication

To my parents.

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Dating and Attachment among Single Women with Multiple Sclerosis

Introduction to MS

Approximately 100,000 Canadians are afflicted with multiple sclerosis (MS). Canadians have one of the largest prevalence rates of MS worldwide (MS Society, 2015). MS is an illness of the central nervous system (CNS), whereby the myelin sheath (a crucial structure that allows the nervous system to transport messages to the body) is damaged (MS Society, 2015). As a consequence of this neurological disruption, the illness carries a host of troublesome symptoms, such as sexual, bladder, and bowel dysfunction, cognitive difficulties (i.e., forgetfulness), and mobility challenges (World Health Organization, 2008). Resulting from direct illness effects, as well as stressors associated with MS, there is also an increased prevalence of psychological issues such as depression (Paparrigopoulos, Ferentinos, Kouzoupis, Koutsis, & Papadimitriou, 2010). MS has a young average age of onset (mid-twenties to early thirties). Given the potentially early onset and invasive illness symptoms, MS can be quite disruptive to one's life-course. One important area of life that may be disrupted by the onset of MS is the formation of romantic relationships, which are often developed during early adulthood (World Health Organization, 2008).

There is evidence that MS can create significant stress within romantic relationships, and can negatively impact the endurance of such existing relationships (Pfleger, Flachs, & Koch-Henriksen, 2010). In addition, women with chronic illness such as MS may face increased risk for the dissolution of an ongoing relationship (Glantz et al., 2009). This heightened threat to relationships among those with MS is troublesome, as being in a stable romantic relationship positively impacts well-being for both those in the general population (i.e., Hyoun & McKenry, 2002) as well as for those with MS (Gulick, 1997; Zeldow & Pavlou, 1984). Yet, it is not only

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the presence of a relationship, but also the *quality* of the relationship that promotes well-being, with highly distressed romantic relationships not showing a beneficial effect (i.e., Robles & Kiecolt-Glaser, 2003). Despite the positive effect of a healthy romantic partnership, little research exists on the impact of MS in the formation and on the quality of dating relationships for individuals living with this illness.

Dating and MS

The challenges in dating and forming relationships amongst individuals with MS have not been examined in the empirical literature. In fact, no research on the unique dating experiences for individuals with MS was located through an extensive search on the databases PubMed and PsycINFO. However, there have been a small number of studies conducted on dating experiences among combined groups of physically challenged individuals with diagnoses such as spinal cord injury, cerebral palsy, acquired brain injury, arthritis, and MS. In one such study, Taleporos and McCabe (2003) found that individuals who were physically challenged were significantly more likely to be single compared to a healthy control group. Further, the likelihood of being single increased significantly with the severity of disability. Another investigation of dating relationships was conducted amongst 250 individuals with physical disabilities, such as a spinal cord injury, cerebral palsy, MS, stroke, and a traumatic brain injury (Rintala et al., 1997). Although women with MS were included in the sample, they comprised less than 12% of the participants. Compared to a group of single women without any physical disability, single women with a physical disability were older and reported a greater likelihood of never marrying as well as lower satisfaction with their regularity of dating. In addition, these women believed they had more difficulties than non-disabled women in attracting romantic partners, and reported increased social and personal challenges with dating, such as limited

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opportunities to meet potential dating partners due to their disability, or barriers in their physical environment preventing socializing (e.g., inaccessible buildings, transport) (Rintala et al., 1997). Decreased satisfaction with dating frequency and challenges in dating and attracting partners was also echoed in another study among women with various disabilities including spinal cord injury, polio, muscular dystrophy, and MS (Nosek, Howland, Rintala, Young, & Chanpong, 2001). Finally, in a qualitative study by Howland and Rintala (2001), participants reported that they believed their disabilities (such as spinal cord injuries, polio, amputation, cerebral palsy, spina bifida, rheumatoid arthritis, MS, or stroke) made them less attractive to romantic partners. Moreover, they noted that physical barriers resulting from their disability interfered with dating. Those who had an onset of disability in adulthood stated that this required them to "relearn" how to date as a physically-challenged person.

From prior research it is also clear that the severity of the physical symptoms associated with an illness may negatively influence dating. In the aforementioned qualitative study by Howland and Rintala (2001), women reported more difficulties getting a date when their physical symptoms were more visible (e.g., requiring the use of a wheelchair). In addition, symptom severity appeared to introduce more practical barriers to dating, such as difficulties with bladder control and mobility issues (Howland & Rintala, 2001). Lastly, among a group of individuals with a disability, functional limitations were shown to be associated with more challenges in dating, such as difficulties in attracting partners, and greater beliefs that individuals with a disability do not wish to date (Rintala et. al., 1997). Taken together, this small extant literature shows that individuals with increased physical disability face unique challenges to dating successfully.

Such findings support the idea that those with MS may encounter a number of significant challenges related to their illness when attempting to date. While past research does provide a number of relevant findings to the MS population, it is important to investigate the experiences of dating among those with MS separately from those with other disabilities for several reasons. First, in prior research there has been large variation in the type of disability examined with congenital conditions, such as cerebral palsy, being examined alongside disabilities acquired later in life, such as MS. This strategy is problematic as there may be differences in the visibility of such illnesses (e.g., cerebral palsy versus MS), as well as the longevity of the illness. For example, cerebral palsy is present from childhood; therefore, individuals would never have had a dating experience without this disability. In contrast, MS often strikes in the 20s and 30s, therefore individuals may have dated for several years without physical challenges, and perhaps struggle with this new reality (Howland & Rintala, 2001).

Additionally, the visibility of MS may be lessened compared to other illnesses. On the one hand, those with MS may suffer with more "invisible" symptoms such as cognitive difficulty or bladder or bowel issues. On the other hand, people with MS may also have highly visible manifestations such as spasticity of limbs or mobility challenges requiring use of a wheelchair. This variability in the visibility of MS would clearly alter the potential issues associated with dating. Finally, MS is episodic with a somewhat unpredictable illness course, which also differentiates MS from other conditions. Individuals living with MS would likely need to constantly readjust to dating while living with this evolving, and potentially disabling condition.

Attachment Style and Romantic Relationships in Healthy Individuals

Along with the difficulties that individuals with MS encounter due to their illness and disability, additional psychological factors may account for the variance in dating experiences.

Importantly, adult attachment style has been demonstrated to explain significant variability in the experiences (positive or negative) in the *formation* of romantic relationships. Attachment refers to a consistent interpersonal interaction style as well as the beliefs one holds in relationships. It has been conceptualized in two basic patterns: secure attachment, which is characterized by increased trust and comfort in relationships, and insecure attachment, which denotes more anxiety or avoidance in close relationships (Brumbaugh & Fraley, 2010). Insecure attachment styles in particular have been shown to be associated with a decreased likelihood of committing to a relationship, lower relationship quality, and less relationship stability (e.g., Collins & Read, 1990; Feeney, 1996; Feeney & Noller, 1990; Schindler, Fagundes, & Murdock, 2010). Given the critical role of attachment style in the formation of adult romantic relationships, this construct provides a useful framework through which to examine dating experiences among single women living with MS.

The construct of adult attachment first garnered attention in 1987, when Shaver and Hazen proposed that the attachment patterns formed during infancy continue on into adulthood and impact the way one interacts with romantic partners. Moreover, they theorized that adult attachment fell into three categories; secure, anxious-ambivalent, and avoidant (Shaver & Hazan, 1987). As research and theory developed in this field, attachment became operationalized more frequently as a dimensional construct, rather than a categorical variable, allowing for more complexity when investigating attachment patterns.

Brennan, Clark, and Shaver (1998) further refined the construct of attachment after conducting a meta-analysis of 320 different attachment measures. The results of the meta-analysis showed that attachment could be consolidated into two dimensions: anxious attachment (i.e., elevated fears of abandonment and a negative view of oneself) and avoidant attachment

(i.e., decreased comfort with intimacy and a negative view of others). According to the empirical evidence and the theory, having absent or low levels of avoidant and/or anxious attachment is indicative of a secure attachment style (i.e., increased trust in relationships and confidence in being independent) (Brumbaugh & Fraley, 2010). Secure, anxious, and avoidant styles exist on a continuum where an individual may fall at any point on each attachment construct (Frayley & Shaver, 2000). Moreover, each construct represents a learned attachment pattern that would result in differing responses within relationships (e.g., a person higher on anxious attachment would be more reactive to losing a partner). From this framework, the Experiences in Close Relationships Scale was developed, which contains both anxious and avoidant subscales to reflect this revised theory of adult attachment (Brennan et al., 1998).

Empirical data underscore the significant influence of adult attachment on the formation and quality of adult romantic relationships (e.g., Collins & Read, 1990; Feeney, 1996; Fraley & Shaver, 2000). Those with secure attachment styles have been shown to report increased relationship satisfaction, commitment, and trust compared to those who are insecurely attached (i.e., higher on the avoidance and anxiety dimensions) (e.g., Keelan, Patrick, Dion, & Dion, 1994; Simpson, 1990). Insecure attachment styles have been shown to negatively impact romantic relationships. For example, those partnered with individuals high on anxious attachment tend to report lower relationship quality than those paired with more securely attached partners (Collins & Read, 1990). In addition, Birnie, McClure, Lydon, and Holmberg (2009) found among those higher (vs. lower) on avoidant attachment had a greater aversion to commitment within a romantic relationship and a stronger belief that their romantic relationships would not succeed.

Such patterns have also been found not only for established, committed relationships, but also for the detrimental impact of insecure attachment on dating. In one such study among college students, those higher on avoidant attachment were less likely than those with other attachment styles to commit to a romantic relationship (Schindler et al., 2010). In addition, those higher (vs. lower) on anxious attachment and avoidant attachment were less likely to be in a relationship or to be in a casual dating relationship (Bookwala, 2003). Moreover, men dating an anxiously attached female partner reported lower relationship satisfaction, while women with more securely attached male partners reported more satisfaction with their dating relationship (Collins & Read, 1990). Lastly, research has also found an increased rate of relationship break up among those with insecure attachment (Feeney & Noller, 1990).

Attachment style also influences how optimistic one feels about future potential romantic partnerships. In an innovative study by Mohr, Crook-Lyon, and Kolchakian (2010), 174 participants were asked to imagine being in a committed relationship and to complete measures regarding what beliefs about relationships they would hold in the future (using a measure of attachment) and to give predictions about this imagined future relationship. Compared to those who predicted low future avoidant or anxious attachment, participants who foresaw being high on future avoidant attachment believed they would have worse communication and relationship satisfaction. Those who predicted their future attachment as more anxious (vs. other styles) foresaw trouble with communication, and also experienced an increase in their state anxiety during the study. Taken together, extant data suggest that attachment may even influence how one reacts to imagined future relationships, which may have important consequences for perceptions of dating.

Relationships, Attachment, and Disability

Despite the considerable influence of attachment on romantic relationships, limited research has examined this relationship among those with physical disabilities. The preliminary research has found that the associations among attachment, relationship satisfaction, and relationship quality tend to follow the same patterns found among physically healthy samples. For example, physically-disabled people with higher levels of insecure attachment also display poorer relationship quality (Hwang, Johnston, & Smith, 2007). Further, individuals with MS who reported greater avoidant and anxious attachment also described decreased feelings of trust, acceptance, intimacy, and commitment in their relationships (Litke, 2006). Likewise, individuals with MS who scored higher (vs. lower) on avoidant attachment also reported less relationship satisfaction (Litke, 2006).

Compared to physically healthy individuals, insecure attachment may have a more detrimental impact on individuals living with a physical disability or chronic illness such as MS. In fact, stress, illness, or other kinds of threat are considered important activators of attachment schemas (Hunter & Maunder, 2001). Having the additional stress of illness can serve to intensify avoidant or anxious attachment patterns already present among those with MS (Feeney, 2008). Given the potentially debilitating aspects of the illness, MS has been shown to cause significant strain for individuals living with the illness. For example, MS has been shown to be associated with high levels of perceived stress and uncertainty given the constantly changing illness course and troubling physical symptoms (Dennison, Moss-Morris, & Chalder, 2009). Within this context, existing attachment patterns would be amplified; an individual with MS who is already anxiously attached may become even more fearful that s/he may be abandoned by a romantic partner. As a result s/he may exhibit behavior that is increasingly vigilant for cues of

abandonment. Therefore, it would be anticipated that individuals with MS who report greater insecure attachment would have more difficulties in dating relationships compared to individuals with more secure attachment (Feeney, 2008; Hunter & Maunder, 2001).

Sexual Esteem, Body Esteem, and Dating

In addition to attachment, another key construct to consider when examining the dating experiences of individuals with MS is their satisfaction with their sexuality and physical appearance. Such perceptions have been shown to play a key role in experiences within romantic relationships among those with physical disabilities, including MS (Lease, Cohen, & Dahlbeck, 2007). Indeed, the constructs of body esteem and sexual esteem, which relate to perceptions about one's body and sexuality, have been found to be particularly relevant for those with physical disabilities. The construct of sexual esteem was advanced by Snell and Papini (1989), wherein, sexual esteem was defined as one's belief that s/he can appreciate and participate in sexual intimacy. Body esteem refers to satisfaction with the appearance of one's body as a person with a physical disability (Mayer & Eisenberg, 1988), specifically, the effect of a physical disability on one's body esteem. Notably, this construct differs from that of body image, which typically relates to subjective appraisals of one's body such as satisfaction with one's weight or ideal body size (Pfaffeberger, 2011).

Sexual esteem is of particular importance to women with MS. MS can cause a vast array of symptoms that negatively impact sexual functioning. Due to direct effects of MS illness progression, women with MS have been found to report difficulty with orgasms, decreased lubrication, and genital numbness (Miller, Bourdette, Ritvo, & Stuart, 1994; Zorzon et al., 1999). Moreover, other symptoms associated with MS may create further challenges to intimacy within relationships, such as concerns over bladder and bowel dysfunction or muscle spasticity (Foley

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& Werner, 2004). When contrasted with a healthy sample, those living with MS reported greater levels of sexual dysfunction (73.1%) compared to 12.7% of healthy individuals, and less sexual activity than those without MS (McCabe, McKern, McDonald, & Vowels, 2003; Zorzon et al., 1999). Clearly, such symptoms and concerns regarding sexuality among those living with MS have the potential to create increased challenges for individuals with MS who are dating.

In addition to concerns regarding sexuality, it is important to consider the impact of visible physical symptoms on the dating experiences of individuals with MS. For example, individuals with MS may suffer challenges with mobility such as spasticity of muscles or muscle weakness that may be visible to others. Further, mobility issues may be significant enough to require the use of a wheelchair (WHO, 2008). Those living with MS may be concerned about the visibility of their physical condition; more visible symptoms may directly impact body esteem. In turn, worse body esteem is thought to negatively influence potential dating relationships (Rintala et al., 1997).

Research on body and sexual esteem has been scarce among MS populations. However, in other samples of physically disabled people, level of disability has been found to have a deleterious impact on body and sexual esteem, as well as perceived attractiveness to others (e.g., McCabe, Taleporos, & Dip, 2003; Taleporos & McCabe, 2001; Taleporos & McCabe, 2005), with worse perceived disability associated with poorer body esteem (Taleporos & McCabe, 2005). Moreover, upon comparing body esteem among those with physical disabilities to those with no disability, individuals with a physical disability were found to have significantly poorer body esteem (Taleporos & McCabe, 2005). Additionally, lowered body esteem specific to physical ability was worse among those with MS (n = 35), compared to a healthy control group (n = 41). Meanwhile, perceptions of attractiveness to others were not significantly different when

compared to the control group (Barak, Lampl, Sarova-Pinchas & Achiron, 1998). Yet, despite this increased risk for individuals with a disability to struggle with lower body esteem, sexual esteem, and perceived attractiveness to others, little research has been conducted on the consequences of these negative self-appraisals on dating and relationships in people with MS.

While current literature has not explicitly investigated the impact of sexual esteem, perceived attractiveness to others, and body esteem on dating, some preliminary research points to the potential role of such factors. Specifically, more negative views about perceptions of one's perceived attractiveness to others as well as for body esteem have been found to lead to less confidence with one's ability to begin a romantic relationship among individuals with a disability (Lease et al., 2007). Additional support of the potential importance of such variables in dating and relationships comes from research among healthy individuals. In one study, better sexual esteem was found to be an important predictor of better communication within dating relationships (Oattes & Offman, 2007). Moreover, better sexual esteem has been shown to be predictive of increased sexual satisfaction within relationships (Ménard & Offman, 2009). The current research expanded upon such findings by explicitly examining the role of body and sexual esteem and perceived attractiveness to others in negative dating experiences.

Gender, MS, and Dating

The present research, which examined dating experiences among those with MS, focused solely on women. There are several reasons for examining only women. First, MS is an illness that affects women much more frequently than men, with a gender ratio of 3:1 (MS Society of Canada, 2015). Additionally, women face a uniquely high rate of relationship dissolution when facing a physical illness compared to men. Specifically, when a group of 515 individuals with cancer or MS were examined, women who were ill were six times more likely to have their

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romantic relationship end compared to men (Glantz et al., 2009). Therefore, given both the higher rate of MS among women and the unique challenges they face in maintaining a relationship compared to men, only female participants were recruited for this study.

Role of Age in Dating Relationships for Women with MS

MS has an average age of onset between 25-33 (World Health Organization, 2008). The current study examined two groups of individuals; those between the ages of 20-40 years of age and those between 50-65. These two age groups are cited in the general literature as representing different age-related stages of adult romantic relationship formation. Age 20-40 corresponds to the time individuals are frequently first diagnosed with MS and also wish to begin their own family or committed relationship (Sassler, 2010; World Health Organization, 2008). Those of older age ranges between 50-65 were examined separately, as these individuals would most likely have been living with MS for much longer, which would arguably cause a very different experience in dating (i.e., one would have spent the majority of their adult life with such a disability). Moreover, there is some evidence that older adults likely have different relationships goals (such as wanting a companion but not necessarily a marriage) than those of younger groups (Sassler, 2010). Therefore, these two age groups have been selected, both due to illness trajectory and research conventions within the literature.

Depression, MS, and Dating

The lifetime prevalence rate of depression among those with MS is three times the rate of the general population among those with MS (Paparrigopoulos et al., 2010). It has been theorized that both MS illness progression and increased psychosocial stressors suffered by this group may be responsible such elevations in rates of depression (Arnett & Strober, 2011; Chwastiak & Ehde, 2009; Haussleiter, Brüne, & Juckel, 2009). Additionally, depression can have problematic

consequences in the formation and maintenance of dating relationships. Specifically, increased rates of depression are associated with decreased chances of being in a romantic relationship (Gibb, Fergusson, & Horwood, 2011). Moreover, it is well accepted that those with depression often avoid certain behaviours such as participating in social interactions (Carvalho & Hopko, 2011). This could therefore limit the opportunities for those with MS also suffering from depression to meet dating partners or maintain dating relationships. However, this study sought to better understand the role of disability severity, attachment, and sexual and body esteem on dating experiences, rather than the role of depression on dating. Therefore, given the high rates of depression experienced by those with MS, and its possible deleterious impact on dating, depression symptoms were controlled for in the analyses.

Study Aim and Hypotheses

The aim of the current study was to investigate the impact of MS on dating among women through both quantitative and qualitative methods. In the quantitative component, the impact of physical disability, insecure attachment, body esteem, and sexual esteem on dating outcomes were examined. In addition, the qualitative component of the study investigated the extent to which MS impacted dating, body, and sexual esteem of women as well as how body and sexual esteem influenced dating. Both methods accounted for age and examined whether dating experiences differed between younger and older women with MS.

Quantitative Hypotheses

Hypothesis 1. After controlling for illness duration, age, and depression, greater severity of disability will be associated with greater difficulties in dating experiences.

Hypothesis 2. After controlling for illness duration, depression, and age, the relationship between greater severity of disability and greater difficulties in dating experiences will be

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moderated by attachment style. Specifically, the relationship between disability and negative dating experiences will be stronger for those with more (vs. less) insecure attachment.

Hypothesis 3. After controlling for illness duration, depression, and age, the relationship between greater severity of disability and greater difficulties in dating experiences will be moderated by sexual esteem and body esteem. Specifically, the relationship between disability and negative dating experiences will be stronger for those with worse (vs. better) body esteem and sexual esteem.

Methods

Overview of Study Design

The current study was a mixed methods design, using a concurrent triangulation strategy. Specifically, this means that both the qualitative and quantitative components were conducted simultaneously. The qualitative and quantitative parts were examined and interpreted together. This strategy allowed for richer information on the impact of MS on dating for women (Creswell, 2009). The study analyzed data from semi-structured individual qualitative interviews and quantitative responses to a self-report questionnaire. In the qualitative component of the study, interviews focused on dating experiences, body and sexual esteem of women with MS. The quantitative component included a self-report questionnaire about dating experiences, and additional factors that may contribute to the dating experiences of women with MS, such as attachment styles, sexual and body esteem and illness severity.

Quantitative Participants

Single women with MS were recruited from the Multiple Sclerosis Society of Canada or the National MS Society (a large MS society in the United States) with approval from Ryerson University REB. Specifically, the research was advertised by the MS Society through their websites, list serves, and through flyers posted in the MS Societies. To participate women must have been: 1) between 20-40 years-of-age or 50-65 years-of-age 2) diagnosed with MS for at least six months (to ensure an individual has had a chance to date while having MS), 3) self-identified as presently single, 4) fluent in English.

Quantitative Procedure

Women who were interested and eligible to participate in the research study were given the option to call the research 1-800 number, or to contact this researcher via the MS study e-

mail contact. Each potential participant was contacted via phone by this researcher within a few business days. At that time, additional information about the study and eligibility criteria was given. Eligible and interested participants were then mailed the consent form and a copy of the questionnaire packets (participants were provided with pre-stamped addressed envelopes). After signing the informed consent documentation, they were instructed to complete the questionnaire packet. Participants were informed that if they experienced any distress when completing the study they could stop the questionnaire any time. Additionally, participants were informed that mental health resources in their community would be provided if they experienced any distress. No research participants reported distress related to the completion of the questionnaire. Upon completion of the packet, the women were mailed a $15 gift card to a coffee shop. If the questionnaire packets were not received within a month a reminder call was made to participants.

Quantitative Measures

      Demographic Information. A demographic measure was given to participants, which included participants' age, ethnicity, education level, income level, type of MS diagnosis, and illness duration.

      Adult Attachment Styles. The Experiences in Close Relationships – Revised (ECR-R) is a widely used and psychometrically strong instrument used to assess adult attachment (Ravitz, 2010). It contains 36-items and consists of two subscales, avoidant attachment and anxious attachment (Fraley, Waller, & Brennan, 2000). An investigation by Sibley and Liu (2004) confirmed the two-factor model of anxiety and avoidance accounting for 51% of the variance in the scale. In addition, high internal consistency has been found for avoidance ($\alpha = .93$) and anxiety ($\alpha = .94$). The ECR-R also has a strong temporal stability of 86% shared variance or greater over a 6-week time period for both the anxiety and avoidance factors (Sibley & Liu,

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2004). The internal consistency (Cronbach's α) for the current sample was high for both avoidant attachment (α = .88) and anxious attachment (α = .91) (Table 1).

Depression Symptoms. The CES-D was used to assess symptoms of depression with 20 items (Radloff, 1977). These items include questions such as "I could not get going" and were rated on a Likert scale ranging from 0 (rarely or none of the time) to 3 (most or all of the time). The CES-D has been validated with individuals with MS (Verdier-Taillefer, Gourlet, Fuhrer, & Aplerovitch, 2001), showing good reliability (Cronbach's α = .90) and validity. The internal consistency was α = .91 within the study sample (Table 1). Scores of or greater 16 have been identified as indicating possible clinically significant levels of depression (Verdier-Tillerfer et al., 2001).

Dating Experiences. Dating experiences of women with MS were examined using a questionnaire developed by Rintala and colleagues (1997). The Dating Experiences Questionnaire was developed to assess the dating experiences and challenges of women with disabilities, and contains four subscales: 1) Perceived Constraints on Attracting Partners (e.g., "my appearance makes it difficult to attract someone to date"), Perceived Societal Barriers to Dating (e.g., "physical barriers in my environment limit my ability to socialize"), Perceived Personal Barriers to Dating (e.g., "lack of reliable transport limits my ability to socialize"), and Perceived Communication Problems (e.g., "I never learned how to express my interest to potential dating partners"). The questionnaire is comprised of 15-items and is rated on a Likert scale ranging from 1 (very untrue) to 7 (very true). While findings from a factor analysis have been reported, which confirmed these four subscales, the psychometrics of the scales (such as reliability) have not been reported in prior research. The internal consistency (Cronbach's α) for each subscale within the study sample was as follows: Perceived Constraints on Attracting

Partners (α = .73), Perceived Societal Barriers to Dating (α = .68), and Perceived Communication Problems (α = .61). Unfortunately the internal consistency of the Perceived Personal Barriers to Dating (α = .34) scale was unacceptably low, and therefore was not used in the present analysis. Additionally, in consultation with the DEQ author, a DEQ total score was created (α = .77) (personal communication, Rintala) (Table 1).

Body Esteem and Sexual Esteem. Body and Sexual Esteem were measured with the Physical Disability Sexual and Body Esteem Scale (PDSBE) (Taleporos & McCabe, 2002. The 10-item questionnaire consists of three subscales: Sexual Esteem, Body Esteem, and Perceived Attractiveness to Others. Four items comprise the Sexual Esteem subscale (e.g., "I feel my disability interferes with my sexual enjoyment"), three items form the Perceived Attractiveness to Others subscale (e.g., "it is harder to find a sexual partner when you have a disability"), and two items comprise the Body Esteem subscale (e.g., "I would do a body swap with an able bodied person if I could"). It was created for, and validated with individuals with various disabilities, including MS. The total scale was found to have a test-retest reliability of .78 and an internal consistency .92 (Taleporos & McCabe, 2002). The internal consistency (Cronbach's α) for each subscale was acceptable: sexual esteem (α = .86), perceived attractiveness to others (α = .84), body esteem (α = .70), and the total PSDBE scale (α = .86) (Table 1).

Disability Severity. The Guy's Neurological Disability Scale was used to assess disability level, which can be administered through interview or via self-report. It is widely used in research and has been validated amongst individuals with MS (Rossier & Wade, 2002). The GNDS assesses disability with the use of 12 scales, with each scale being comprised of four to eight yes or no questions. These areas include speech and communication, vision, memory and concentration, use of hands and arms, mood and emotion, mobility, swallowing, bladder

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function, bowel function, sexual functioning, fatigue, and other disabilities. For example, one such question in the section on mobility inquired, "Do you have problems with your walking?" The reliability of the total score was .97 in prior research. The self-report version of the GNDS has been shown to be a valid measure of disability and was correlated highly with other similar such as the Expanded Disability Status Scale and the Barthel Index (Rossier & Wade, 2002). In the present study the total score of the self-report GNDS was used, with Cronbach's $\alpha = .66$ (Table 1).

Quantitative Data Analyses

Power Analyses and Control of Type I Error. Given the multiple analyses for each hypothesis, a strict Bonferroni correction was used to control for Type I error. In addition, an *a priori* power calculation was conducted to determine number of participants required for recruitment. With all covariates and predictors included in the model, to obtain .80 power (with alpha = .05) and a total R^2 of .30, 95 women were needed. An additional 18 women were

Table 1

Internal Consistency (Cronbach's α) for ECR-R, CESD, DEQ, PDSBE, and GNDS

Variable	Cronbach's α
ECR-R	
ECR-R Avoidant	.88
ECR-R Anxious	.91
CES-D	.91
Dating Experiences Questionnaire (DEQ)	
DEQ Perceived Constraints	.73
DEQ Perceived Communication Barriers	.61
DEQ Perceived Societal Barriers	.68
DEQ Total Score	.77
PDSBE	
PDSBE Sexual Esteem	.86
PDSBE Perceived Attractiveness to Others	.84
PDSBE Body Esteem	.70
PDSBE Total Score	.86
GNDS Total Score	.66

Note. ECR-R = The Experiences in Close Relationships – Revised; CES-D = Center for Epidemiological Studies Depression Scale; PDSBE = Physical Disability Sexual and Body Esteem Scale

recruited to account for participants who did not fully complete the survey. Therefore, we recruited a total of 113 women for the quantitative component of this study.

Hypothesis 1. After controlling for illness duration, age, and depression (measured with the CES-D), greater severity of disability (measured with the GNDS) was expected to be associated with greater difficulties in dating experiences, as measured by four separate subscales of the Dating Experiences Survey (Perceived Constraints on Attracting Partners, Perceived Societal Barriers to Dating, and Perceived Communication Problems, and Total Dating Experiences).

This hypothesis was tested using a hierarchical regression analysis with Dating Experiences as the dependent variable for each of the four subscales. The first step controlled for the demographic variables of illness duration, depression, and age. Age was entered as a continuous variable for this model and all subsequent analyses. The second step examined severity of disability. Using a strict Bonferroni correction of alpha = .05 divided by 4 models (four dating outcomes), a significance level of greater than or equal to .0125 was needed.

Hypothesis 2. It was hypothesized that after controlling for illness duration, depression (measured with the CES-D), and age, the relationship between greater severity of disability (measured with the GNDS) and increased difficulties in dating experiences (measured by the four subscales of the Dating Experiences Survey) would be moderated by attachment style (measured by the ECR-R). Specifically, the relationship was expected to be stronger for those with more (vs. less) insecure attachment.

Moderation analyses were conducted using PROCESS for SPSS, a program that allows for the testing of moderation within SPSS in one statistical analysis (Hayes, 2012; Hayes, 2013). This statistical program allows for the completion of a moderation analysis through examining

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conditional effects. Moderation (or a conditional effect) occurs when the interaction (i.e., the product of the independent variable and moderator) is significant (Hayes, 2012). Specifically, PROCESS allows for probing interactions and conditional effects at various values of the moderator variable. The default setting uses the sample mean plus or minus one standard deviation. The program also provides bootstrap confidence intervals at 95%; the effect is significant if the confidence interval does not cross '0.' A major benefit of the PROCESS program is that it completes the moderation analysis using a single command and mean centers the product terms before the analysis. Moreover, if there is a conditional effect, the program plots that effect so that the interaction terms can be decomposed in one step (Hayes, 2012; Hayes, 2013). All variables were centered and adjusted for heteroscedasitcity as recommended by Hayes (2012). R^2 adjusted is not available in PROCESS. Using a strict Bonferroni correction of alpha = .05 divided by 8 models (four dating outcomes for each of two moderators), a significance level of greater than or equal to .00625 was needed to be statistically significant.

Hypothesis 3. It was hypothesized that worse body and sexual esteem would be associated with a stronger relationship between worse disability and worse dating experiences as measured by through the four subscales of the dating questionnaire (Perceived Constraints on Attracting Partners, Perceived Societal Barriers to Dating, and Perceived Communication Problems).

Moderation analyses were also conducted for Hypothesis 3 using PROCESS for SPSS (Preacher & Hayes, 2012). Again, variables were centered and adjusted for heteroscedasticity. After controlling for depression (measured with the CES-D), illness duration, and age, the relationship between greater severity of disability and increased difficulties in dating experiences (measured by the four subscales of the Dating Experiences Survey) was expected to be

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moderated by sexual esteem and body esteem (measured by the PDSBE subscales for body esteem, sexual esteem, perceived attractiveness to others, and the total body and sexual esteem scale). Using a Bonferroni correction of alpha = .05 divided by 16 models (four dating outcomes for each of four moderators), a significance level of greater than or equal to .003 was needed to be statistically significant.

Results

Preliminary Data Analysis

Data were examined for multicollinerarity, violations of normality, and outliers. Specifically, the parametric assumptions of a multiple regression and outliers were examined. Test assumptions were met and there were no outliers that were significantly influencing the data. The scatterplot for the Perceived Societal Barriers Subscale was found to be slightly heteroscedastic. However, given that all other examinations of the data found no test assumption violations or outliers of significance, data were not transformed since a transformation may create more issue with data interpretation and accuracy (p. 156. Field, 2009). For hypothesis two and three, moderation analyses were conducted using PROCESS for SPSS (Hayes, 2013). All variables were centered and adjusted for heteroscedasticity as recommended by Hayes (personal communication, 2014).

Participant Demographics

Ninety-nine single women living with MS were included in the analysis. One hundred and thirteen women were recruited into the study. One hundred women completed the survey and 12 did not return their surveys. One woman chose to drop out after being recruited into the study. One additional woman was dropped from the analysis as she began a committed romantic relationship while taking part in the study. Women were recruited from Canada (38.4%) and the United States (61.6%). T-tests were conducted to examine whether there were significant differences on the main study variables as well as age and illness duration between Canadian and US participants. No significant differences were found between Canadian versus US participants on any variables.

Table 2 displays demographic and MS-related medical information for the sample. The mean age of the sample was 43.5 years ($SD = 11.84$ years), and women had been living with MS for an average of 10.78 years ($SD = 8.54$ years). Many women in the sample had attended post-secondary education (66.6%). Sixty-one percent of participants reported an annual income of $0-45,000. Just under half of the women worked full-time (33.3%) or part-time (14.1%) and 34.3% were on disability leave. The majority of the participants had relapsing-remitting MS (86.6%). Most women were Caucasian (77.8%) with the remaining participants identifying as Black, Aboriginal, South Asian, West Asian, Latin American, or other.

Descriptive Information on Psychological Variables

As displayed in Table 3, the mean scores on the ECR-R Avoidant and Anxious subscales were $M = 3.73$ and $M = 4.13$ respectively. Possible scores range from 1-7, with greater scores indicating worse insecure attachment. The CES-D had a mean of $M = 20.78$ in the present sample, with potential scores ranging from 0-60; higher scores indicated more depression symptoms. This indicates the present sample had significant symptoms of depression. Moreover, 60 women (60.6%) had a CES-D score over 16 or greater, which is indicative of elevated symptoms that could be at a clinical level of depression. The DEQ subscales could range from 1-7, with higher scores indicating worse dating experiences. The means were as follows: DEQ Total $M = 3.12$, DEQ Perceived Communication Barriers $M = 3.73$, DEQ Perceived Societal Barriers $M = 2.38$, and DEQ Perceived Constraints $M = 3.96$. The PDSBE scale score means were as follows: PDSBE Total $M = 29.57$ (possible range 10-50), PDSBE Sexual Esteem $M = 13.44$ (possible range 4-20), PDSBE Body Esteem $M = 5.07$ (possible range 2-10), PDSBE Perceived Attractiveness to Others $M = 8.62$ (possible range 3-15). Higher PDSBE scores indicated better

esteem. The GNDS mean was $M = 17.97$ with a possible range from 0-60, with greater scores indicating worse disability.

To investigate the relatedness amongst study variables, Pearson correlation coefficients were examined (see Table 4). Age was found to be strongly correlated with MS duration, to have a moderate correlation with PDSBE Perceived Attractiveness, and to be weakly correlated with the GNDS, DEQ Societal Barriers to Dating, and PDSBE Total Perceived Attractiveness. MS duration was moderately correlated with DEQ Perceived Societal Barriers and DEQ Total, and weakly correlated with GNDS, DEQ Dating Constraints, and PDSBE Perceived Attractiveness. The overall level of disability (GNDS) was strongly correlated with DEQ Mean, PDSBE Total, moderately correlated with CES-D, DEQ Dating Constraints DEQ Perceived Societal Barriers to Dating, PSBBE Perceived Attractiveness, PDSBE Sexual Esteem, and weakly correlated with ECR-R Anxious and Avoidant Attachment, and PDSBE Body Esteem. Depression symptoms (CESD) were moderately correlated with DEQ Constraints, DEQ Communication, DEQ Mean, PDSBE Perceived Attractiveness, PDSBE Body Esteem, PDSBE Sexual Esteem, PDSBE Total, and ECR-R Avoidant and Anxious Attachment.

The outcome variable of DEQ Dating Constraints was moderately correlated with PDSBE Perceived Attractiveness, PDSBE Sexual Esteem, PDSBE Total, ECR-R Avoidant, and ECR-R Anxious Attachment. The outcome variable of DEQ Societal Barriers to Dating was strongly correlated with PDSBE Perceived Attractiveness, and moderately correlated with PDSBE Sexual Esteem, PDSBE Total, and ECR-R Anxious Attachment. The outcome variable

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Table 2

Sample Demographics (N = 99)

Variable	Percent	*M*	*SD*
Age (years)		43.05	11.84
Duration MS		10.78 years	8.54 years
Education			
High school	8.1		
Some College/University	25.3		
College/University	44.4		
Graduate School	22.2		
Annual Income			
0-45,000	61.6		
45-75,000	26.3		
More than 75,000	12.1		
Employment			
Working Full Time	33.3		
Working Part Time	14.1		
Retired	6.0		
Disability	34.3		
Unemployed	4.0		
Full or Part-Time Student	8.0		

Variable	Percent	*M*	*SD*
Type of MS			
Relapsing Remitting	86.6		
Secondary Progressive	9.1		
Primary Progressive	1.0		
Progressive Relapsing	3.0		
Ethnicity			
Caucasian	77.8		
Black	9.1		
Aboriginal	1.0		
South Asian	3.0		
Chinese	2.0		
Arab/West Asian	1.0		
Latin American	2.0		
Other	4.0		
Country			
Canada	38.4		
USA	61.6		

Table 3

Scores on ECR-R, CESD, Dating Experiences Questionnaire, Perceived Body and Sexual Esteem (PDSBE), and GNDS

Variable	*M*	*SD*	Actual Range
ECR-R			
ECR-R Avoidant	3.73	.95	1-7
ECR-R Anxious	4.13	1.13	1-7
CES-D	20.78	1.18	0-60
Dating Experiences Questionnaire (DEQ)			
DEQ Total	3.12	.93	1-7
DEQ Perceived Communication Barriers	3.73	1.55	1-7
DEQ Perceived Barriers	2.38	1.36	1-7
DEQ Perceived Constraints	3.96	1.43	1-7
PDSBE			
PDSBE Total	29.57	9.15	10-50
PDSBE Sexual Esteem	13.44	4.62	4-20
PDSBE Body Esteem	5.07	2.46	2-10
PDSBE Perceived Attractiveness to Others	8.62	3.46	3-15
GNDS	17.97	7.44	0-60

Note. ECR-R = The Experiences in Close Relationships – Revised; CES-D = Center for Epidemiological Studies Depression Scale; PDSBE = Physical Disability Sexual and Body Esteem Scale

of DEQ Communication Barriers to Dating was strongly correlated with the ECR-R Avoidant Attachment, moderately correlated with PDSBE Total, and ECRR Anxious Attachment, and weakly correlated with the PDSBE Perceived Attractiveness, PDSBE Body Esteem, and PDSBE Sexual Esteem. The outcome variable of DEQ Total was strongly correlated with PDSBE Perceived Attractiveness, ECRR Anxious Attachment, and PDSBE Total, moderately correlated with PDSBE Sexual Esteem and ECR-R Avoidant, and weakly correlated with PDSBE Body Esteem.

Hypothesis One: The Association of Disability Level With Dating Experiences

It was hypothesized that after controlling for age, illness duration, and depression symptoms, greater severity of disability would be associated with worse dating experiences. Four multiple regressions were conducted.

Disability and perceived societal barriers to dating. The first regression examined the impact of disability severity on perceived societal barriers to dating (see Table 5.1). The overall model accounted for 20.8% of the variance in perceived societal barriers to dating, $R^2adj = .208$, $F(4, 94) = 7.433$, $p = .001$. In step 1 of the regression, greater MS duration predicted more perceived societal barriers to dating ($\beta = .419$, $p = .001$). Neither age ($\beta = .003$, $p = .981$), nor depression symptoms ($\beta = .152$, $p = .103$) were significant as predictors. In step 2, disability ($\beta = .249$, $p = .017$) and greater illness duration ($\beta = .385$, $p = .001$), R^2 Change $= .048$, were the only significant predictors of increased societal barriers to dating.

Disability and communication barriers in dating. Table 5.2 displays the results of the hierarchical regression analysis. The overall model accounted for 7.5% of the variance in perceived communication in dating, $R^2adj = .075$, $F(4, 94) = 2.989$, $p = .023$. In step 1, greater depression symptoms predicted more perceived communication barriers to dating ($\beta = .263$, $p =$

.009). In step 2, R^2 Change = .016, none of the variables significantly predicted communication barriers in dating: depression symptoms (β = .204, p = .061), illness duration (β = .185, p = .123), age (β = -.139, p = .247), and disability (β = .146, p = .191). It should be noted that after applying the Bonferroni correction, this finding could no longer be interpreted as significant.

Disability and perceived dating constraints. Table 5.3 displays the results of the hierarchical regression analysis. The overall model accounted for 18.7% of the variance in dating constraints, R^2adj = .187, F (4, 94) = 6.641, p = .001. In step 1, greater illness duration (β = .271, p = .020) and depression symptoms (β = .322, p = .001) predicted more perceived dating constraints. In step 2, R^2 Change = .068, greater illness duration (β = .230, p = .042), more depression symptoms (β = .201, p = .049), and worse disability (β = .3297, p = .005) predicted greater perceived dating constraints.

Disability and total dating experiences. Table 5.4 displays the results of the hierarchical regression analysis. The overall model accounted for 35.2% of the variance in the total dating experiences summary score, R^2adj = .352, F (4, 94) = 14.296, p = .001. In step 1, greater illness duration (β = .403, p = .001) and depression symptoms (β = .389, p = .000) predicted greater overall dating difficulties. In step 2, R^2 Change = .109, greater illness duration (β = .351, p = .001), depression symptoms (β = .237, p = .010), and disability severity (β = .376, p = .001) were associated with more overall difficulties dating.

Summary of analyses for hypothesis one. The role of age, illness duration, depression, and disability in dating barriers was investigated in hypothesis one. Age was not significantly associated with worse dating experiences. Increased illness duration and disability were significantly associated with worse perceived societal barriers to dating. Increased illness duration, disability levels, and depression symptoms were significantly associated with worse

Table 4

Pearson Correlation Coefficients for Dating Experiences Questionnaire, ECR-R, PDSBE, CES-D, and Demographic Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Age	1													
2. Dur MS	.56**	1												
3. GNDS	.23*	.22*	1											
4. CESD	-.09	-.06	.38**	1										
5. DEQ Con	.03	.20*	.39**	.31**	1									
6. DEQ Soc	.23*	.41**	.34**	.13	.55**	1								
7. DEQ Com	-.02	.13	.23	.26*	.27**	.15	1							
8. DEQ Mn	.11	.33**	.51**	.37**	.78**	.73**	.60**	1						
9. PDSBE AT	-.32**	-.20*	-.49**	-.30**	-.49**	-.63**	-.24*	-.64**	1					
10. PDSBE BE	-.13	-.03	-.23*	-.38**	-.11	-.07	-.26*	-.27**	.39**	1				
11. PDSEB SE	-.07	-.07	-.48**	-.33**	-.38**	-.35**	-.29**	-.49**	.59**	.37**	1			
12. PDSBE To	-.20*	-.13	-.51**	-.43**	-.41**	-.44**	-.31**	-.58**	.82**	.66**	.86**	1		
13. ECR-R Av	-.03	-.08	.13	.49**	.31**	.16	.53**	.38**	-.22*	-.17	-.36**	-.32**	1	
14. ECR-R An	.14	.18	.24*	.31**	.43**	.35**	.43**	.51**	-.38**	-.25*	-.31**	-.38**	.51**	1

Note. Dur MS = MS Duration; DEQ Con = DEQ Dating Constraints; DEQ Soc = DEQ Societal Barriers; DEQ Com = DEQ Communication; DEQ Mn = DEQ Mean; PDSBE At = PDSBE Perceived Attractiveness to Others; PDSBE BE = PDSBE Body Esteem; PDSBE SE = PDSBE Sexual Esteem; PDSEB To = PDSBE Total; ECR-R Av = ECR-R Avoidant Attachment; ECR-R An = ECR-R Anxious Attachment.
** $p < 0.01$
* $p < 0.05$

scores on the perceived dating constraints subscale as well as worse scores on the total dating experiences scale (see Figure 1).

Hypothesis Two: Moderation of Disability and Dating Experiences by Attachment

The following are the findings from the analyses examining the moderation effect of attachment on the relationship of disability severity with dating experiences, after accounting for depression, illness duration, and age. All of the models were significant at the $p < .0001$ level and therefore met the minimum significance levels determined *a priori* by the Bonferroni corrections.

Anxious attachment and perceived societal barriers to dating. Table 6.1 displays the model examining the extent to which anxious attachment moderated the relationship between disability severity and perceived barriers to dating. As shown, no significant interaction was detected, $B = .008$, 95% CI [-.0128-.028], $t = .748$, $p = .456$. However, greater disability ($B = .049$, $p = .003$), more anxious attachment ($B = .345$, $p = .016$), and greater illness duration ($B = .005$, $p = .013$) were significantly associated with more perceived dating barriers. The overall model accounted for 30% of variance in perceived dating barriers, $R^2 = .300$, $F(6,92) = 7.26$, $p = .0001$.

Anxious attachment and perceived constraints to dating. As shown in Table 6.2, there was no statistically significant moderation of anxious attachment between disability and perceived dating constraints, $B = -.002$, 95% CI [-.027-.024], $t = -.120$, $p = .905$. Greater disability ($B = .058$, $p = .007$) and more anxious attachment ($B = .431$, $p = .002$) predicted worse dating constraints. The overall model accounted for 30.2% of variance in perceived dating constraints, $R^2 = .302$, $F(6,92) = 8.664$, $p = .0001$.

Table 5.1

Regression Analysis Examining the Effect of Illness Duration, Depression Symptoms, Age, and Disability on Perceived Societal Barriers to Dating

	B	SE (B)	β	F	R^2_{adj}	R^2_{change}
Step 1				7.538***	.167	.192***
Intercept	1.277	.559				
Age	.000	.013	.003			
Duration of MS	.006	.001	.419***			
CES-D	.018	.011	.152			
Step 2				7.433***	.208	.048*
Intercept	.991	.558				
Age	-.005	.013	-.043			
Duration of MS	.005	.001	.385**			
CES-D	.006	.011	.051			
GNDS	.046	.019	.249*			

Note. GNDS = Disability Severity; CES-D = Depression Symptoms.
*$p < .05$, **$p < .01$, ***$p < .001$.

Table 5.2

Regression Analysis Examining the Effect of Illness Duration, Depression Symptoms, Age, and Disability on Perceived Communication Problems when Dating

	B	$SE(B)$	β	F	R^2_{adj}	R^2_{change}
Step 1				3.381*	.068	.096*
Intercept	3.248	.675				
Age	-.015	.016	-.113			
Duration of MS	.003	.002	.205			
CES-D	.035	.013	.263**			
Step 2				2.989*	.075	.016
Intercept	3.057	.688				
Age	-.018	.016	-.139			
Duration of MS	.003	.002	.185			
CES-D	.027	.014	.204			
GNDS	.030	.023	.146			

Note. GNDS = Disability Severity; CES-D = Depression Symptoms.
*$p < .05$, **$p < .01$, ***$p < .001$.

Table 5.3

Regression Analysis Examining the Effect of Illness Duration, Depression Symptoms, Age, and Disability on Perceived Constraints to Dating

	B	$SE (B)$	β	F	R^2_{adj}	R^2_{change}
Step 1				5.679**	.125	.152***
Intercept	3.123	.600				
Age	-.011	.014	-.088			
Duration of MS	.004	.002	.271*			
CES-D	.039	.011	.322***			
Step 2				6.641***	.187	.068**
Intercept	2.764	.592				
Age	-.017	.014	-.143			
Duration of MS	.003	.002	.230*			
CES-D	.024	.012	.201*			
GNDS	.057	.020	.297**			

Note. GNDS = Disability Severity; CES-D = Depression Symptoms.
*$p < .05$, **$p < .01$, ***$p < .001$.

Table 5.4

Regression Analysis Examining the Effect of Illness Duration, Depression Symptoms, Age, and Disability on Total Dating Experiences

	B	SE (B)	β	F	R^2_{adj}	R^2_{change}
Step 1				11.651***	.246	.269***
Intercept	2.306	.364				
Age	-.007	.008	.087			
Duration of MS	.004	.001	.403***			
CES-D	.031	.007	.389***			
Step 2				14.296***	.352	.109***
Intercept	2.010	.345				
Age	-.012	.008	-.156			
Duration of MS	.003	.001	.351**			
CES-D	.019	.007	.237*			
GNDS	.047	.012	.376***			

Note. GNDS = Disability Severity; CES-D = Depression Symptoms.
*$p < .05$, **$p < .01$, ***$p < .001$.

Figure 1. Summary of Hypothesis 1 Findings

	Societal Barriers to Dating	Communication Barriers to Dating	Constraints Attracting Partners	Total Barriers to Dating
Step 1				
Age				
Duration of MS	✓		✓	✓
Depression (CES-D)		✓	✓	✓
Step 2				
Age				
Duration of MS	✓		✓	✓
Depression (CES-D)			✓	✓
Disability (GNDS)	✓		✓	

Anxious attachment and perceived communication barriers to dating Table 6.3 shows no statistically significant moderation of anxious attachment between disability severity and communication barriers to dating, $B = -.019$, 95% CI [-.054-.016], $t = -.1.088$, $p = .280$. Only greater anxious attachment predicted more barriers in communication ($B = .539$, $p = .001$). The overall model accounted for 23.6% of variance in communication barriers, $R^2 = .236$, $F(6,92) = 8.410$, $p = .0001$.

Anxious attachment and overall dating experiences. Table 6.4 shows no statistically significant moderation of anxious attachment between disability level and total dating experiences, $B = -.002$, 95% CI [-.014-.010], $t = -.361$, $p = .789$. Although no moderation was found, greater disability ($B = .047$, $p = .001$), more anxious attachment ($B = .308$, $p = .001$), younger age ($B = -.016$, $p = .041$), and longer illness duration ($B = .003$, $p = .001$) predicted worse overall dating experiences. The overall model accounted for 47.7% of variance in total dating experiences, $R^2 = .477$, $F(6,92) = 21.82$, $p = .0001$.

Avoidant attachment and perceived societal barriers to dating. An additional four moderation analyses were run examining the role of avoidant attachment between disability and dating experiences. In Table 6.5 no statistically significant moderation of avoidant attachment was found for the relationship between disability and perceived barriers to dating, $B = -.002$, 95% CI [-.035-.032], $t = -.092$, $p = .927$. However, more severe disability ($B = .046$, $p = .006$) and longer MS duration ($B = .005$, $p = .003$) were associated with greater perceived barriers to dating. The overall model accounted for 25.6% of variance in perceived dating barriers, $R^2 = .256$, $F(6,91) = 5.865$, $p = .0001$.

Avoidant attachment and perceived constraints to dating. Table 6.6 also shows no statistically significant moderation effect for perceived dating constraints $B = -.017$, 95% CI [-.053-.018], $t = -.963$, $p = .338$. Greater disability ($B = .057$, $p = .004$), and longer MS duration ($B = .003$, $p = .039$) were both associated with more dating constraints. The overall model accounted for 28.1% of variance in perceived dating constraints, $R^2 = .281$, $F(6,91) = 8.221$, $p = .001$.

Avoidant attachment and perceived communication constraints to dating. Table 6.7 shows no statistically significant moderation effect for communication barriers to dating, $B = -.007$, 95% CI [-.042-.028], $t = -.261$, $p = .689$. In this model, greater avoidant attachment ($B = .826$, $p = .001$) and longer MS duration ($B = .004$, $p = .034$) were significantly associated with more communication difficulty. The overall model accounted for 35.1% of variance in communication barriers to dating, $R^2 = .351$, $F(6,91) = 1.191$, $p = .0001$.

Avoidant attachment and perceived overall dating experiences. Finally, Table 6.8 shows no significant moderation of total dating experiences, $B = -.006$, 95% CI [-.024-.011], $t = -.722$, $p = .472$. Greater disability ($B = .046$, $p = .001$), more avoidant attachment ($B = .302$, $p = .001$), and greater MS duration ($B = .003$, $p = .001$) all significantly predicted worse overall dating experiences The overall model accounted for 47.1% of variance in total dating experiences, $R^2 = .471$, $F(1,91) = 16.180$, $p = .0001$.

Summary of analyses for hypothesis two. The role of attachment as a moderator of disability and dating barriers was examined. Overall, no moderation effects were detected for either anxious or avoidant attachment in any of the models examined.

In the models examining anxious attachment (see Figure 2), greater disability, anxious attachment, and illness duration were each associated with worse perceived barriers to dating.

Further, greater disability and anxious attachment were associated with more dating constraints. Only greater anxious attachment was associated with communication barriers to dating. For the total dating experiences subscale, more disability, longer illness duration, younger age, and increased anxious attachment were all significantly associated with worse dating outcomes.

In the models examining avoidant attachment (see Figure 3), generally similar patterns were found to that for anxious attachment. Increased disability levels and longer MS duration were associated with greater perceived dating barriers. Greater disability, longer MS duration, and avoidant attachment were associated with more dating constraints. Greater avoidant attachment, younger age, and longer MS duration predicted more communication barriers. Finally, avoidant attachment, worse disability, and MS duration all significantly predicted worse total dating experiences.

Hypothesis Three: Moderation of Disability and Dating Experiences by Body and Sexual Esteem

Hypothesis 3 was examined by conducting a series of 16 moderation analyses to examine the potential role of body esteem, sexual esteem, perceived attractiveness to others, and total body and sexual esteem on dating experiences (see Tables 7.1-7.16). Four analyses examined the moderating effect of body esteem on the relationship between disability and dating experiences.

Body esteem and societal barriers to dating. Table 7.1 shows no statistically significant moderation effect for perceived barriers to dating, $B = .002$, 95% CI [-.010-.014], $t = .323$, $p = .747$. Worse disability ($B = .045$, $p = .007$) and longer MS duration ($B = .005$, $p = .004$) were associated with increased dating barriers. The overall model accounted for 24.1% of the variance in perceived barriers to dating, $R^2 = .241$, $F(6,92) = 5.42$, $p = .0001$.

Body esteem and constraints to dating. Table 7.2 displays no statistically significant moderation for dating constraints, $B = .001$, 95% CI [-.014-.015], $t = .064$, $p = .949$. Greater disability was associated with more dating constraints ($B = .057$, $p = .004$). The overall model accounted for 22.1% of the variance in dating constraints, $R^2 = .221$, $F(6,92) = 4.566$, $p = .001$.

Body esteem and communication barriers to dating. Communication barriers to dating were not significantly moderated by body esteem, $B = .003$, 95% CI [-.016-.023], $t = .355$, $p = .723$ (Table 7.3). No other variables were statistically significant in the model, which accounted for 14.5% of the variance in communication barriers, $R^2 = .145$, $F(6,92) = 2.107$, $p = .060$. After applying the Bonferroni correction, this finding could no longer be interpreted as statistically significant.

Body esteem and overall barriers to dating Finally, Table 7.4 shows no statistically significant moderation by body esteem of total dating experiences, $B = .001$, 95% CI [-.008-.008], $t = .010$, $p = .992$, however greater disability ($B = .046$, $p = .001$) and longer illness duration ($B =. 003$, $p = .001$) were significantly associated with worse overall dating experiences. The overall model accounted for 39% of the variance in total dating experiences, $R^2 = .390$, $F(6,92) = 10.056$, $p = .0001$.

Hypothesis Three: Moderation of Disability and Dating Experiences by Perceived Attractiveness

Perceived attractiveness and perceived societal barriers to dating. Four analyses examined the moderating role of perceived attractiveness to others of the relationship between disability and dating experiences. Table 7.5 shows no statistically significant moderation of perceived attractiveness to others on perceived barriers to dating, $B = -.001$, 95% CI [-.009-.006], $t = -.358$, $p = .721$. Less perceived attractiveness to others ($B = .-.245$, $p = .0001$) and longer

Table 6.1

Regression Analysis Examining the Moderation Effect of Anxious Attachment on Disability and Perceived Societal Barriers to Dating

	Coeff.	*SE*	*t*
Intercept	2.413	.635	3.802**
GNDS	.049	.016	3.07**
Anx Attachment	.345	.141	2.452*
GNDS x Anx Attachment	.008	.010	.748
Age	-.009	.014	-.618
MS Duration	.005	.002	2.540*
CES-D	-.012	.014	-.867

Note: Anx Attachment =Anxious Attachment; GNDS=Disability Severity; CES-D=Depression Symptoms.
$R^2 = .300$, $MSE = 1.381$, $F(6,92) = 7.26$, $p = .0001$.
*p < .05, **p < .01, ***p < .001.

Table 6.2

Regression Analysis Examining the Moderation Effect of Anxious Attachment on Disability and Perceived Dating Constraints

	Coeff.	*SE*	*t*
Intercept	4.522	.718	6.301**
GNDS	.058	.021	2.770**
Anx Attachment	.431	.134	3.210**
GNDS x Anx Attachment	-.002	.013	-.120
Age	-.022	.014	-1.552
MS Duration	.003	.001	1.717
CES-D	.003	.016	.200

Note: Anx Attachment = Anxious Attachment; GNDS = Disability Severity;
CES-D = Depression Symptoms.
$R^2 = .302$, $MSE = 1.5125$, $F(6,92) = 8.664$, $p = .0001$
*$p < .05$, **$p < .001$, ***$p < .001$***.

Table 6.3

Regression Analysis Examining the Moderation Effect of Anxious Attachment on Disability and Communication Barriers to Dating

	Coeff.	*SE*	*t*
Intercept	4.491	.816	5.504**
GNDS	.026	.025	1.026
Anx Attachment	.539	.158	3.402**
GNDS x Anx Attachment	-.019	.018	-.088
Age	-.023	.016	-1.448
MS Duration	.002	.002	1.175
CES-D	.002	.018	.105

Note: Anx Attachment = Anxious Attachment; GNDS = Disability Severity;
CES-D = Depression Symptoms.
$R2 = .236$, $MSE = 1.96$, $F(6,92) = 8.410$, $p = .0001$
*$p < .05$, **$p < .001$, ***$p < .001$.

Table 6.4

Regression Analysis Examining the Moderation Effect of Anxious Attachment on Disability and Total Dating Experiences

	Coeff.	*SE*	*t*
Intercept	3.378	.403	8.374**
GNDS	.047	.009	5.143**
Anx Attachment	.308	.074	4.167**
GNDS x Anx Attachment	-.002	.006	-.361
Age	-.016	.007	-2.076*
MS Duration	.003	.001	3.555**
CES-D	.004	.008	.433

Note: Anx Attachment = Anxious Attachment; GNDS = Disability Severity;
CES-D = Depression Symptoms.
$R^2 = .477$, $MSE = .482$, $F(6,92) = 21.821$, $p = .0001$
*$p < .05$, **$p < .001$, ***$p < .001$.

Figure 2. Summary of Findings for Hypothesis 2 (Anxious Attachment)

	Societal Barriers to Dating	Communication Barriers to Dating	Constraints Attracting Partners	Total Barriers to Dating
Age				✓
Duration of MS	✓			✓
Depression (CES-D)				
Disability (GNDS)	✓		✓	✓
Anxious Attachment	✓	✓	✓	✓
Moderation by Anxious Attachment				

Table 6.5

Regression Analysis Examining the Moderation Effect of Avoidant Attachment on Perceived Societal Barriers to Dating by Disability

	Coeff.	*SE*	*t*
Intercept	1.983	.624	3.181**
GNDS	.459	.016	2.795**
Avd Attachment	.221	.162	1.369
GNDS x Avd Attachment	-.002	.017	-.092
Age	-.007	.015	-.444
MS Duration	.005	.002	3.028**
CES-D	.001	.012	.061

Note. Avd Attachment = Anxious Attachment; GNDS = Disability Severity;
CES-D=Depression Symptoms.
$R^2 = .256$, *MSE* = 1.452, $F(6,91) = 5.865$, *p* = .0001
*p < .05, **p < .001, ***p < .001.

Table 6.6

Regression Analysis Examining the Moderation Effect of Avoidant Attachment on Disability and Perceived Dating Constraints

	Coeff.	*SE*	*t*
Intercept	4.080	.657	6.208**
GNDS	.057	.019	2.937**
Avd Attachment	.336	.142	2.363*
GNDS x Avd Attachment	-.017	.018	-.963
Age	-.021	.014	-1.464
MS Duration	.003	.002	2.095*
CES-D	.017	.014	1.181

Note. Avd Attachment = Anxious Attachment; GNDS = Disability Severity;
CES-D = Depression Symptoms.
R^2 = .281, *MSE*=1.561, *F*(6,91) =8.221, *p* = .0001
*p < .05, **p < .001, ***p < .001.

Table 6.7

Regression Analysis Examining the Moderation Effect of Avoidant Attachment on Disability and Communication Barriers to Dating

	Coeff.	*SE*	*t*
Intercept	3.980	.660	6.032**
GNDS	.026	.020	1.287
Avd Attachment	.826	.154	5.351**
GNDS x Avd Attachment	-.007	.018	-.261
Age	-.020	.016	-1.261*
MS Duration	.004	.002	2.151*
CES-D	.007	.016	.477

Note: Avd Attachment = Anxious Attachment. GNDS = Disability Severity;
CES-D = Depression Symptoms.
R^2 = .351, MSE = 1.66, $F(6,91)$ = 1.191, p = .0001
*p < .05, **p < .001, ***p < .001.

Table 6.8

Regression Analysis Examining the Moderation Effect of Avoidant Attachment on Disability and Total Dating Experiences

	Coeff.	*SE*	*t*
Intercept	3.027	.363	8.332**
GNDS	.046	.010	4.420**
Avd Attachment	.302	.087	3.467**
GNDS x Avd Attachment (XM)	-.006	.009	-.722
Age	-.013	.007	-1.824
MS Duration	.003	.001	4.080**
CES-D	.012	.008	1.449

Note. Avd Attachment = Anxious Attachment; GNDS = Disability Severity;
CES-D = Depression Symptoms.
R^2 = .471, *MSE* = .493, $F(1,91)$ = 16.180, *p* = .0001
*p < .05, **p < .001, ***p < .001.

Figure 3. Summary of Findings for Hypothesis 2 (Avoidant Attachment)

	Societal Barriers to Dating	Communication Barriers to Dating	Constraints Attracting Partners	Total Barriers to Dating
Age		✓		
Duration of MS	✓	✓	✓	✓
Depression (CES-D)				
Disability (GNDS)	✓		✓	✓
Avoidant Attachment		✓	✓	✓
Moderation by Avoidant Attachment				

illness duration ($B = .005$, $p = .001$) were significant predictors of this outcome. The overall model accounted for 50.7% of the variance in perceived dating barriers, $R^2 = .507$, $F(6,92) = 15.38$, $p = .0001$.

Perceived attractiveness and dating constraints. Table 7.6 also shows no statistically significant moderation for dating constraints, $B = -.001$, 95% CI [-.010-.008], $t = -.265$, $p = .792$. Less perceived attractiveness to others ($B = -.174$, $p = .0001$), longer illness duration ($B = .003$, $p =.031$), and younger age ($B = -.031$, $p = .027$) were significant predictors of this outcome. The overall model accounted for 34.2% of the variance in perceived dating constraints, $R^2 = .342$, $F(6, 92) = 8.904$, $p = .0001$.

Perceived attractiveness and communication barriers. As shown in Table 7.7, communication barriers to dating were not moderated by perceived attractiveness, $B = .010$, 95% CI [-.006-.026], $t = .1.271$, $p = .207$, and no other variables significantly predicted this outcome. The overall model accounted for 16.1% of the variance in communication barriers to dating, $R^2 = .161$, $F(6,92) = 2.106$, $p = .038$. After applying the Bonferroni correction, this finding could no longer be interpreted as statistically significant.

Perceived attractiveness overall dating experiences. Finally, Table 7.8 shows no statistically significant moderation of total dating experiences, $B = .002$, 95% CI [-.003-.007], $t = .846$, $p = .400$. However, greater disability ($B = .022$, $p = .026$), lower perceived attractiveness, ($B = -.144$, $p = .0001$), younger age ($B = -.024$, $p = .001$), and longer illness duration ($B = .003$, $p = .0001$) were significantly associated with worse total dating experiences. The overall model accounted for 57.9% of the variance in total dating experiences, $R^2 = .579$, $F(6,92) = 21.13$, $p = .0001$.

Hypothesis Three: Moderation of Disability and Dating Experiences by Sexual Esteem

Sexual esteem and perceived societal barriers. Four analyses examined the moderating role of sexual esteem in the relationship between disability and dating experiences. Table 7.9 shows no statistically significant moderation was found for perceived societal barriers to dating, $B = .002$, 95% CI [-.003-.008], $t = .807$, $p = .422$. However, worse sexual esteem ($B = -.078$, $p = .019$) and longer illness duration ($B = .005$, $p = .005$) were associated with greater dating barriers. The overall model accounted for 54% of the variance in perceived barriers to dating, $R^2 = .540$, $F(6, 92) = 7.198$, $p = .0001$.

Sexual esteem and perceived dating constraints. Table 7.10 also showed no statistically significant moderation for perceived dating constraints by sexual esteem, $B = -.001$ 95% CI [-.008-.005], $t = -.443$, $p = .659$. Worse sexual esteem ($B = -.067$, $p = .036$) and longer MS duration ($B = .003$, $p = .048$) were associated with more dating constraints. The overall model accounted for 25.8% of the variance in perceived dating constraints, $R^2 = .258$, $F(6, 92) = 6.680$, $p = .0001$.

Sexual esteem and perceived communication barriers. Table 7.11 shows communication barriers to dating were not significantly moderated by sexual esteem, $B = .004$, 95% CI [-.006-.014], $t = .761$, p = .449. No other variables significantly predicted this outcome. The overall model accounted for 14.9% of the variance in communication barriers to dating, $F(6, 92) = 2.594$, $p = .023$. After taking applying the Bonferroni correction, this finding could no longer be interpreted as statistically significant.

Sexual esteem and overall barriers to dating. Finally no statistically significant moderation by sexual esteem of total dating experiences was found, $B = .003$, 95% CI [-.001-.007], $t = 1.298$, $p = .197$. Greater disability ($B = .032$, $p = .006$), longer illness duration ($B =$

.003, $p = .001$), worse sexual esteem ($B = -.061$, $p = .004$) were all associated with worse total

dating experiences (Table 7.12). The overall model accounted for 45% of the variance in total

dating experiences, $R^2 = .450$, $F(2, 96) = 14.689$, $p = .0001$.

Hypothesis Three: Moderation of Disability and Dating Experiences by Total PDSBE

      Total body and sexual esteem and perceived societal barriers. Four analyses

examined the moderating role of the total body and sexual esteem scale in the relationship

between disability and dating experiences. Table 7.13 shows no statistically significant

moderation for perceived societal barriers to dating $B = -.001$, 95% CI [-.003-.003], $t = -.209$, $p =$

.835. Greater illness duration ($B = .005$, $p = .003$) and worse total body and sexual esteem ($B = -$

.057, $p = .005$) were significantly associated with greater dating barriers. The overall model

accounted for 33.7% of the variance in perceived societal barriers to dating, $R^2 = .337$, $F(6, 92) =$

7.973, $p = .0001$.

      Total body and sexual esteem and perceived dating constraints As shown on Table

7.14, there was also no significant moderation by total body and sexual esteem for perceived

dating constraints, $B = -.001$, 95% CI [-.004-.002], $t = -.707$, $p = .482$. Worse disability ($B =$

.038, $p = .048$), worse total body and sexual esteem ($B = -.042$, $p = .009$), and longer MS

duration ($B = .003$, $p = .042$) were all significantly associated with greater dating constraints.

The overall model accounted for 26.9% of the variance in perceived dating constraints, $R^2 = .269$,

$F(6, 92) = 7.242$, $p = .0001$.

      Total body and sexual esteem and perceived communication barriers Table 7.15

shows that total body and sexual esteem did not significantly moderate communication barriers

to dating, $B = .002$, 95% CI [-.003-.008], $t = .845$, $p = .417$. In addition, no other predictor

variables were statistically significant in the model. The overall model accounted for 16.1% of

the variance in communication barriers, $R^2 = .161$, $F(6, 92) = 2.452$, $p = .030$. After applying the Bonferroni correction, this finding could no longer be interpreted as statistically significant

Total body and sexual esteem and overall dating barriers Finally, Table 7.16 shows the relationship between disability and total dating experiences was not moderated by total body and sexual esteem, $B = .001$, 95% CI [-.002-.002], $t = .404$, $p = .687$. However, greater disability ($B = .028$, $p = .009$), worse total body and sexual esteem ($B = -.043$, $p = .001$), younger age ($B = -.017$, $p = .018$), and greater illness duration ($B = .003$, $p = .001$) were significantly associated with worse total dating experiences The overall model accounted for 49.5% of the variance in total dating experiences, $R^2 = .495$, $F(6, 92) = 14.317$, $p = .0001$.

Summary of analyses for hypothesis three. Hypothesis 3 was examined by conducting a series of 16 moderation analyses to examine the potential role of body esteem, sexual esteem, and total body and sexual esteem on the dating experiences (see Figures 4-7). While no statistically significant moderation was detected in any model, other significant predictors emerged. Body esteem and longer MS duration were significantly associated with worse perceived dating barriers and worse total dating experiences. Only greater disability was associated with more dating constraints in models that included body esteem.

Investigation into the potential moderating role of perceived attractiveness found no moderation, yet less perceived attractiveness to others and longer illness duration were significant predictors of more perceived barriers to dating. Less perceived attractiveness, longer illness duration, and younger age were associated with more dating constraints. Lower perceived attractiveness, younger age, greater disability, and longer illness duration were associated with worse total dating experiences.

Upon investigating the role of sexual esteem, no moderation was found, yet worse sexual esteem, greater disability, and longer illness duration were associated with greater perceived dating barriers as well as worse overall dating experiences. In addition, worse sexual esteem and longer MS duration were associated with greater perceived dating constraints.

In the final set of models, no evidence was found for the moderating role of total body and sexual esteem. Yet, greater illness duration and worse total body and sexual esteem were significantly associated with greater perceived dating barriers. Worse total body and sexual esteem, increased disability, and longer MS duration were all significantly associated with more dating constraints. Worse total body and sexual esteem, younger age, greater total disability, and greater illness duration were significantly associated with worse overall dating experiences.

Quantitative Discussion

Description of Sample

Overall, women in this sample were generally similar with regards to disability severity, depression, and insecure attachment compared to other published samples of those with MS. In general, the average level of physical disability was in the moderate range on the GNDS for both the present study as well as in other MS studies. The present sample reported relatively similar average disability scores on the GNDS of 17.97 compared to another sample of MS patients (n = 21) with scores of 20.0 on the same version of the GNDS (Rosier and Wade, 2001). Another study, which examined the impact of telephone therapy on levels of disability and depression symptoms among 62 participants living with MS for an average of 12 years, reported a baseline GNDS of 23.89 (Mohr, Hart, & Vella, 2007). While participants in that study had slightly higher on GNDS scores than the present sample, patients in the Mohr and colleagues (2007) study were recruited because they met full DSM-IV-TR criteria for depression. Therefore, the lower GNDS scores in this sample may be related to lower depression compared to the Mohr and colleagues (2007) sample.

Participants reported a moderate level of depression symptoms on the CES-D ($M =$ 20.78) with 60% reporting scores above the clinical cut off of 16, which is relatively comparable to other MS studies. For example, in a sample of 412 participants with MS (70% female, 37% with relapsing remitting MS) the mean CES-D score was 17 (Koch, Mostert, Heerings, Uyttenboogaart, & De Keyser, 2009). In another sample of MS patients, the mean CES-D score was 21.2 (Verdier-Tillerfer, et al., 2001). It has been estimated that the lifetime prevalence rate for depression is 40-60% for those living with MS (Vattakatuchery, Rickards, & Cavanna, 2011). While the current sample has a high percentage of participants meeting the clinical cut-off for

depression, it is important to note that the CES-D clinical cut off reflects scores that *could* be indicative of clinical depression, and do not indicate the full DSM-5 criteria for depression (Vattakatuchery et al., 2011).

Regarding attachment, women in the current study reported anxious and avoidant attachment of 4.13 and 3.73 respectively, which is at the midpoint of the scale (ranging from 1-7), reflecting moderate levels of insecure attachment. Means for our sample were slightly higher compared to the ECR-R scores of individuals living with a chronic pain condition ($M = 3.06$ anxious attachment and $M = 3.10$ avoidant attachment) (Kowal, Wilson, McWilliams, Péloquin, & Duong, 2012). While published means for the ECR-R among people with MS could not be found, the mean ECR (i.e., the precursor to the ECR-R) avoidant attachment score was 3.03 and mean ECR anxious attachment score was 3.56 in an MS sample (n = 64; 49 women and 18 men), with 38% having relapsing remitting MS (Litke, 2006). Therefore, the present sample is

Table 7.1

Regression Analysis Examining the Moderation Effect of Body Esteem on Disability and Perceived Barriers to Dating

	Coeff.	*SE*	*t*
Intercept	1.781	.669	2.662**
GNDS	.045	.016	.245**
Body Esteem	.016	.066	.245
GNDS x Body Esteem	.002	.006	.323
Age	-.005	.016	-.282
MS Duration	.005	.002	2.967**
CES-D	.007	.011	.639

Note. GNDS = Disability Severity, CES-D = Depression Symptoms.
R^2 = .24, *MSE* = 1.497, *F*(6,92) = 5.42, *p* = .0001.
*p < .05, **p < .001, ***p < .001.

Table 7.2

Regression Analysis Examining the Moderation Effect of Body Esteem on Disability and Perceived Dating Constraints

	Coeff.	*SE*	*t*
Intercept	3.745	.733	5.108**
GNDS	.057	.019	2.936**
Body Esteem	.016	.063	.246
GNDS x Body Esteem	.001	.007	.064
Age	-.017	.016	-1.078
MS Duration	-.003	.002	1.877
CES-D	.026	.014	1.807

Note. GNDS =Disability Severity; CES-D = Depression Symptoms.
R^2 = .221, *MSE* = 1.689, *F*(6,92) = 4.566, *p* = .001.
*$p < .05$, **$p < .001$, ***$p < .001$.

Table 7.3

Regression Analysis Examining the Moderation Effect of Body Esteem on Disability and Communication Barriers to Dating

	Coeff.	*SE*	*t*
Intercept	3.989	.802	4.973**
GNDS	.027	.025	1.079
Body Esteem	-.112	.075	-1.500
GNDS x Body Esteem	.003	.009	.355
Age	-.023	.017	-1.368
MS Duration	.003	.002	1.651
CES-D	.018	.017	1.034

Note: GNDS = Disability Severity. CES-D = Depression Symptoms.
R^2 = .145, *MSE* = 2.197, $F(6,92)$ = 2.107, *p* = .060.
*$p < .05$, **$p < .001$, ***$p < .001$.

Table 7.4

Regression Analysis Examining the Moderation Effect of Body Esteem on Disability and Total Dating Experiences

	Coeff.	*SE*	*t*
Intercept	2.998	.421	7.123**
GNDS	.046	.010	4.447**
Body Esteem	-.046	.039	-1.192
GNDS x Body Esteem	.001	.004	.010
Age	-.014	.008	-1.696
MS Duration	.003	.001	3.620**
CES-D	.015	.009	1.790

Note. GNDS = Disability Severity; CES-D = Depression Symptoms.
R^2 = .390, *MSE* = .562, *F*(6,92) = 10.056, *p* = .0001.
*$p < .05$, **$p < .001$, ***$p < .001$.

Figure 4. Summary of Findings for Hypothesis 3 (Body Esteem)

	Societal Barriers to Dating	Communication Barriers to Dating	Constraints Attracting Partners	Total Barriers to Dating
Age				
Duration of MS	✓			✓
Depression (CES-D)				
Disability (GNDS)	✓		✓	
Body Esteem				
Moderation by Body Esteem				

Table 7.5

Regression Analysis Examining the Moderation Effect of Perceived Attractiveness to Others on Disability and Perceived Barriers to Dating

	Coeff.	*SE*	*t*
Intercept	2.854	.518	5.505**
GNDS	.003	.014	.232
Perceived Attractiveness	-.245	.043	-5.690***
GNDS x Perceived Attractiveness	-.001	.004	-.358
Age	-.024	.013	-1.857
MS Duration	.005	.001	3.786**
CES-D	-.007	.010	1.694

Note. GNDS = Disability Severity; CES-D = Depression Symptoms.
R^2 = .507, *MSE* = .972, $F(6,92)$ = 15.380, *p* = .0001.
*p < .05, **p < .001, ***p < .001.

Table 7.6

Regression Analysis Examining the Moderation Effect of Perceived Attractiveness to Others on Disability and Perceived Dating Constraints

	Coeff.	*SE*	*t*
Intercept	4.522	.618	7.323**
GNDS	.027	.018	1.477
Perceived Attractiveness	-.174	.041	-4.262**
GNDS x Perceived Attractiveness	-.001	.004	-.265
Age	-.031	.014	-2.256*
MS Duration	.003	.002	2.187*
CES-D	.016	.013	1.206

Note. GNDS = Disability Severity, CES-D = Depression Symptoms.
R^2 = .342, *MSE* = 1.426, *F*(6, 92) = 8.904, *p* = .0001.
*p < .05, **p < .001, ***p < .001.

Table 7.7

Regression Analysis Examining the Moderation Effect of Perceived Attractiveness to Others on Disability and Communication Barriers to Dating

	Coeff.	*SE*	*t*
Intercept	4.140	.750	5.519**
GNDS	.018	.027	.671
Perceived Attractiveness	-.075	.055	-1.358
GNDS x Perceived Attractiveness	.010	.008	1.271
Age	-.025	.016	-1.539
MS Duration	.003	.002	1.553
CES-D	.021	.016	1.313

Note. GNDS = Disability Severity. CES-D = Depression Symptoms.
R^2 = .161, *MSE* = 2.55, *F*(6,92) = 2.106, *p* = .038.
*p < .05, **p < .001, ***p < .001.

Table 7.8

Regression Analysis Examining the Moderation Effect of Perceived Attractiveness to Others on Disability and Total Dating Experiences

	Coeff.	*SE*	*t*
Intercept	3.528	.314	11.255**
GNDS	.022	.010	2.263*
Perceived Attractiveness	-.144	.022	-6.578***
GNDS x Perceived Attractiveness	.002	.003	.846
Age	-.024	.006	-3.779**
MS Duration	.003	.001	4.685***
CES-D	.011	.007	1.431

Note. GNDS = Disability Severity; CES-D = Depression Symptoms.
R^2 = .579, *MSE*=.388, *F*(6,92) = 21.130, *p* = .0001.
*p < .05, **p < .001, ***p < .001.

Figure 5. Summary of Findings for Hypothesis 3 (Perceived Attractiveness)

	Societal Barriers to Dating	Communication Barriers to Dating	Constraints Attracting Partners	Total Barriers to Dating
Age			✓	✓
Duration of MS	✓		✓	✓
Depression (CES-D)				
Disability (GNDS)				✓
Perceived Attractiveness	✓		✓	✓
Moderation by Perceived Attractiveness				

Table 7.9

Regression Analysis Examining the Moderation Effect of Sexual Self Esteem on Disability and Perceived Barriers to Dating

	Coeff.	*SE*	*t*
Intercept	1.961	.593	3.306**
GNDS	.026	.016	1.686*
Sexual Esteem	-.078	.033	-2.379*
GNDS x Sexual Esteem	.002	.003	.807
Age	-.005	.015	-.318
MS Duration	.005	.002	2.905**
CES-D	.000	.011	.018

Note. GNDS = Disability Severity, CES-D = Depression Symptoms.
R^2 = .540, *MSE* = 1.397, *F*(6, 92) = 7.198, *p* = .0001.
*p < .05, **p < .001, ***p < .001.

Table 7.10

Regression Analysis Examining the Moderation Effect of Sexual Self Esteem on Disability and Perceived Dating Constraints

	Coeff.	*SE*	*t*
Intercept	3.850	.671	5.736**
GNDS	.039	.020	1.979
Sexual Esteem	-.067	.031	-2.129*
GNDS x Sexual Esteem	-.001	.003	-.443
Age	-.018	.015	-1.220
MS Duration	.003	.002	2.002*
CES-D	.020	.013	1.54

Note. GNDS = Disability Severity; CES-D = Depression Symptoms.
R^2 = .258, *MSE* = 1.608, $F(6, 92)$ = 6.680, *p* = .0001.
*$p < .05$, **$p < .001$, ***$p < .001$.

Table 7.11

Regression Analysis Examining the Moderation Effect of Sexual Self Esteem on Disability and Communication Barriers to Dating

	Coeff.	*SE*	*t*
Intercept	3.779	.749	5.043**
GNDS	.014	.027	.512
Sexual Esteem	-.071	.038	-1.851
GNDS x Sexual Esteem	.004	.005	.761
Age	-1.018	.017	-1.048
MS Duration	.003	.002	1.478
CES-D	.021	.016	1.331

Note. GNDS = Disability Severity; CES-D = Depression Symptoms.
$R^2 = .149$, *MSE* = 2.186, $F(6, 92) = 2.594$, $p = .023$.
*$p < .05$, **$p < .001$, ***$p < .001$.

Table 7.12

Regression Analysis Examining the Moderation Effect of Sexual Self Esteem on Disability and Total Dating Experiences

	Coeff.	*SE*	*t*
Intercept	2.992	.376	7.969**
GNDS	.032	.012	2.798**
Sexual Esteem	-.061	.021	-2.974**
GNDS x Sexual Esteem	.003	.002	1.298
Age	-.012	.007	-1.625
MS Duration	.003	.001	3.672**
CES-D	.014	.008	1.849

Note. GNDS = Disability Severity; CES-D = Depression Symptoms.
R^2 = .450, *MSE* = .508, *F*(2, 96) = 14.689, *p* = .0001
*$p < .05$, **$p < .001$, ***$p < .001$.

Figure 6. Summary of Findings for Hypothesis 3 (Sexual Self-Esteem)

	Societal Barriers to Dating	Communication Barriers to Dating	Constraints Attracting Partners	Total Barriers to Dating
Age				
Duration of MS	✓		✓	✓
Depression (CES-D)				
Disability (GNDS)	✓			✓
Sexual Self-Esteem	✓		✓	✓
Moderation by Sexual Self-Esteem				

Table 7.13

Regression Analysis Examining the Moderation Effect of Total Body and Sexual Esteem on Disability and Perceived Barriers to Dating

	Coeff.	*SE*	*t*
Intercept	2.357	.636	3.703**
GNDS	.019	.015	1.306
Total Esteem	-.057	.020	-2.897**
GNDS x Total Esteem	-.001	.001	-.209
Age	-.012	.014	-.839
MS Duration	.005	.002	3.080**
CES-D	-.007	.012	-.607

Note. GNDS = Disability Severity; CES-D = Depression Symptoms.
$R^2 = .337$, *MSE* = 1.308, $F(6, 92) = 7.973$, $p = .0001$.
*$p < .05$, **$p < .001$, ***$p < .001$.

Table 7.14

Regression Analysis Examining the Moderation Effect of Total Body and Sexual Esteem on Disability and Perceived Dating Constraints

	Coeff.	*SE*	*t*
Intercept	4.138	.679	6.092**
GNDS	.038	.019	2.009*
Total Esteem	-.042	.016	-2.667**
GNDS x Total Esteem	-.001	.002	-.707
Age	-.022	.015	-1.539
MS Duration	.003	.002	2.062*
CES-D	.015	.013	1.153

Note. GNDS = Disability Severity; CES-D = Depression Symptoms.
$R^2 = .269$, $MSE = 1.584$, $F(6, 92) = 7.242$, $p = .0001$.
*$p < .05$, **$p < .001$, ***$p < .001$.

Table 7.15

Regression Analysis Examining the Moderation Effect of Total Body and Sexual Esteem on Disability and Communication Barriers to Dating

	Coeff.	*SE*	*t*
Intercept	4.103	.754	5.441**
GNDS	.013	.026	.489
Total Esteem	-.039	.022	-1.791
GNDS x Total Esteem	.002	.003	.845
Age	-.023	.016	-1.405
MS Duration	.003	.002	1.551
CES-D	.017	.017	.987

Note. GNDS = Disability Severity; CES-D = Depression Symptoms.
$R^2 = .161$, $MSE = 2.156$, $F(6, 92) = 2.452$, $p = .030$.
*p < .05, **p < .001, ***p < .001.

Table 7.16

Regression Analysis Examining the Moderation Effect of Total Body and Sexual Esteem on Disability and Total Dating Experiences

	Coeff.	*SE*	*t*
Intercept	3.295	.392	8.417***
GNDS	.028	.011	2.651**
Total Esteem	-.043	.011	-3.878**
GNDS x Total Esteem	.001	.001	.404
Age	-.017	.007	-2.407*
MS Duration	.003	.001	4.006**
CES-D	.009	.008	1.025

Note. GNDS = Disability Severity; CES-D = Depression Symptoms.
R^2 = .495, *MSE* = .466, *F*(6, 92) = 14.317, *p* = .0001.
*p < .05, **p < .001, ***p < .001.

Figure 7. Summary of Findings for Hypothesis 3 Total Body and Sexual Esteem

	Societal Barriers to Dating	Communication Barriers to Dating	Constraints Attracting Partners	Total Barriers to Dating
Age				✓
Duration of MS	✓		✓	✓
Depression (CES-D)				
Disability (GNDS)			✓	✓
Total Body and Sexual Esteem	✓		✓	✓
Moderation by Total Body and Sexual Esteem				

generally comparable to other samples with MS or chronic pain conditions, which have also reported moderate insecure attachment scores.

Women in the current research reported similar body esteem, but had slightly better sexual esteem, perceived attractiveness, and higher overall total esteem compared to women in a study by Taleporos and McCabe (2002), which is the only known published study that has used the PDSBE in MS. Specifically, Taleporos and McCabe (2002) examined 348 participants (167 men and 181 women) who had various health conditions, including 7% with MS, and the remainder of the sample had disabilities such as cerebral palsy, fibromyalgia, and muscular dystrophy. Our participants reported sexual esteem $M = 13.44$ in the moderate to good range, perceived attractiveness $M = 8.62$ in the moderate range, and overall total esteem $M = 29.57$ moderate to good range, whereas women in Taleporos and McCabe reported body esteem $M = 8.20$, sexual esteem $M = 11.72$, perceived attractiveness $M = 7.23$, and overall total esteem $M = 27.13$. The body esteem scale ($M = 5.07$) could not be directly compared between the studies because a single item had been removed to improve scale reliability. However, in the current study body esteem was at the midpoint and therefore was comparable to that of Talaperos and McCabe (2002).

Women in this study reported moderately negative dating experiences, generally comparable to Rintala and colleagues' (1997) study examining the dating experiences of 250 single women with various disabilities such as cerebral palsy, muscular dystrophy, multiple sclerosis (11.8%), and spinal cord injury. In comparison to Rintala and colleagues (1997), the present sample had similar scores on the Communication Barriers ($M = 3.09$ vs. $M = 3.73$, respectively) and Perceived Constraints ($M = 4.29$ vs. $M = 3.96$, respectively) subscales, but fewer perceived Societal Barriers to Dating ($M = 3.61$ vs. $M = 2.38$, respectively). In the current

sample, Societal Barriers (e.g. "someone who is interested in me might not ask me out because of what others might say") may be less severe because the visibility of disability may have been lower compared to women in the Rintala sample. For example, 25% of their sample had a spinal cord injury, which is highly visible. The Rintala and colleagues (1997) article did not publish the means for the total DEQ score, so the overall dating experiences cannot be directly compared to the current study. Overall in both studies however, women reported moderately negative experiences in dating.

Hypothesis One: The Impact of Disability Level on Dating Experiences

Regarding hypothesis one, it was proposed that after controlling for the variables of age, duration of MS, and symptoms of depression, greater disability would be associated with worse overall dating experiences (see Figure 1 for a summary of the findings). Both illness duration and greater disability were significantly associated with more perceived societal barriers to dating, more dating constraints, and worse overall dating experiences. One reason for this consistent finding may be related to the visibility of MS. Although it is not the case for all people living with MS, many individuals suffer increased disability as their illness duration increases (e.g., Multiple Sclerosis Society, 2015). With this increase, the visibility of symptoms (such as difficulties with mobility and gait) likely rises as well (World Health Organization, 2008). This more severe symptom profile may serve to heighten both the impact of physical barriers in the environment, (e.g., navigating inaccessible spaces or transport), but also the societal stigma due to increased symptom visibility.

Such stigma has been found to have very real negative consequences for dating. In research among 250 single women living with a physical disability (including MS, cerebral palsy, spinal cord injury and other disabilities), it was found that increased societal barriers such

as stigma made it more difficult to attract possible dating partners (Rintala et al., 1997; Howland and Rintala, 2001). When compared to 180 women without disabilities, women with disabilities reported significantly less dating satisfaction and perceived more societal barriers to dating, as well as greater constraints in attracting dating partners (Rintala et al., 1997). Women endorsed societal barriers to dating to a moderately high degree, such as "people seem surprised I might be interested in physical intimacy," and "someone who is interested in me might not ask me out because of what others might say."

Other research by Howland and Rintala (2001) supports the idea that women with disabilities face increased societal stigma when dating. In their qualitative study with 31 women with various physical disabilities, including spinal cord injury, MS, stroke, traumatic brain injury and arthritis, women experienced many barriers to dating, including enacted stigma due to their disability. For example, women reported that others assumed they could not or would not be interested in physical intimacy due to their disability. Based on the current study data, the severity of the disability may serve as a proxy for the visibility of one's MS symptoms. Moreover, societal barriers to dating appear not to differ significantly between age groups, but rather more so between those with differing levels of disability and visibility. The present study adds to the existing literature by showing that similar to other women with disabilities (e.g., spinal cord injury, cerebral palsy), single women with MS face significant barriers to dating that are associated with disability severity. Interestingly, for the most part it is the disability itself, rather than age that seems to be significantly associated with these dating experiences.

In addition to disability severity, depression was also associated with several dating outcomes. Specifically, greater symptoms of depression were predictive of more perceived dating constraints and more overall negative dating experiences. Depression is a common

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problem in MS, with a three-fold increase compared the general population (Paparrigopoulos et al., 2010). Depression is known to be associated with behavioural social consequences such as pulling away from social interaction, or increased avoidance of social contact (Ottenbreit and Dobson, 2004). Therefore, increased symptoms of depression may serve to heighten avoidance of socializing or dating. Further, depression may be associated with more negative perceptions of oneself, others, and the world, worsening ones perception of barriers to dating (Beck, Rush, Shaw, and Emery, 1979).

Hypothesis Two: Moderation of Disability and Dating Experiences by Attachment

  Anxious and Avoidant Attachment. The moderation of anxious and avoidant attachment on the relationship of disability with dating experiences, after accounting for depression, illness duration, and age, was examined. Unexpectedly, no moderation was found. There were, however, several interesting predictors of greater dating difficulties that emerged. The possible reasons for lack of moderation, along with the significant predictors of dating barriers will be discussed (see Figures 2 and 3 for a summary of the findings).

  First, anxious attachment was a significant predictor across all four outcomes (i.e., perceived societal barriers, dating constraints, communication barriers, and total dating barriers). Specifically, for each variable, greater anxious attachment was predictive of worse dating experiences. As discussed previously, anxious attachment represents a type of insecure attachment associated with increased concern with abandonment by others and a poor self-concept (Brennan et al., 1998). Drawing from the general attachment literature in healthy adults, some studies have found that those who reported higher anxious attachment had a lower chance of being involved in a romantic relationship (Bookwala, 2003). One issue may be the possible difficulties dating partners perceive in becoming involved with those with higher anxious

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attachment. Specifically, in one study by Collins and Read (1990), dating partners of those higher on anxious attachment reported being less satisfied with their partner. Further, research by Mohr and colleagues (2010) found that individuals who anticipated higher future anxious attachment believed they would have more difficulty in future relationships.

It is interesting that avoidant attachment, unlike anxious attachment, lacked the same predictive ability across all dating outcomes. In fact, avoidant attachment was only associated with more perceived barriers to communication as well as overall worse dating experiences. One reason may be that the unique fear of abandonment suffered by those with increased anxious attachment has a more diffuse impact on all types of dating outcomes. Meanwhile, avoidant attachment is associated instead with a feeling of discomfort with close relationships, and a pessimistic outlook concerning the qualities of other individuals (Brennan et al., 1998). Those with greater avoidant attachment are more reticent to enter a romantic relationship, perhaps leading to withdrawal and pessimism specific to communication (Birnie et al., 2009).

Further, a study by Mohr and colleagues (2010) showed greater avoidant attachment was associated with worse dating expectations in a group of 174 young adults (116 female and 58 male) without chronic health issues using a single time point survey. Participants completed questionnaires on attachment (i.e., the ECR) and about how they believed they would act in a future relationship. Those who anticipated having greater levels of avoidant attachment also expected that they would have poorer communication in dating relationships in the future. These data point to the importance of avoidant attachment on negative expectancies for dating, which may in turn lead to the actualization of negative experiences. Indeed, avoidant attachment is characterized by a pattern of dismissive interaction styles, likely leading to worse communication (e.g., Brumbaugh & Fraley, 2010). Therefore, it may make sense that avoidant

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styles is associated with more difficulties in communication in dating as well as overall worse

dating experiences (as the communication subscale is included in the total score).

The current findings underscore the negative impact of insecure attachment on intimate

relationships for those living with MS. While there has not been any research to date examining

how attachment styles impact dating among those with MS, the stress of living with a chronic

illness has been hypothesized to heighten the negative impact of insecure attachment, leading to

an exacerbation of problematic relationship beliefs and behaviours (Hunter & Maunder, 2001).

Litke (2006) reported among 69 individuals with MS, less insecure attachment was associated

with better relationship quality (Litke, 2006). In addition, Hwang et al.'s (2007) study of 100

participants living with a disability showed that there was a clear negative impact of insecure

attachment (both avoidant and anxious, as measured with the ECR) on relationship satisfaction.

Finally, research examining dating among college students found that those with increased

avoidant and anxious attachment were less likely to be in a committed romantic relationship

(Bookwala, 2003; Schindler et al., 2010). Overall, the current findings expand the extant

literature by showing that insecure attachment is a potentially important target in improving

dating expectancies and experiences in women with MS.

Surprisingly, neither anxious nor avoidant attachment moderated the relationship between

disability severity and dating experiences. These data suggest that anxious attachment is a

particularly potent variable in directly predicting dating outcomes, but perhaps the current study

lacked power to significantly detect such moderation. It is also possible however, that

moderation may not be relevant because even a moderate level of anxious attachment is

detrimental to dating experiences. Meanwhile, the null findings for moderation by avoidant

attachment seem reasonable given that avoidant attachment held limited predictive ability

beyond worsened communication barriers to dating. While increased insecure (avoidant and anxious attachments) are understood to have a deleterious impact on romantic relationships (e.g., Collins & Read, 1990; Feeney, 1996; Feeney & Noller, 1990; Schindler et al., 2010), clearly more research is needed to investigate just how this particular pattern may be playing out within single women living with MS, and the potential moderating role of these variables.

Contrary to expectations, younger age was not significantly associated with worse dating experiences in a consistent way. Age differences were expected because life goals often vary between younger and older women (Sassler, 2010) and because the early diagnosis of MS may interfere with attaining such aims (World Health Organization, 2008). When examining anxious attachment, younger age was associated only with total overall barriers to dating, and when examining avoidant attachment, younger age was associated only with greater communication barriers to dating. One explanation may be that the dating experiences measure is not sensitive to age differences. Moreover, given that women have been living with MS on average for more than 10 years, the negative impact of young age on dating experiences may be obfuscated by the length of time living with MS. A different study design that examined women at the earlier ages and closer in time to the MS diagnosis may have shown different effects of age on dating.

Indeed, the models examining anxious attachment showed that MS duration was significant contributor to worse perceived societal barriers to dating and overall worse dating experiences. Moreover, models examining avoidant attachment showed MS duration to be associated with worse dating experiences on all of the scales. Illness duration is often associated with greater symptom burden, which may in turn worsen the perceived dating barriers for women living with MS (e.g., Howland & Rintala, 2001; Nosek et al., 2001; Rintala et al., 1997; Taleporos & McCabe, 2003). However, living with MS for a longer period of time may also

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increase participants' opportunities to have negative dating experiences, which may have a cumulative impact over time.

Although few data exist on how prior negative dating experiences impact current dating expectancies in MS, some research suggests that illness stigma can impact desire to date. For instance, 64 participants (48 female and 16 male) with a genetic mutation for Huntington's disease or breast cancer took part in a qualitative interview study regarding their experiences with dating. The authors concluded that prior negative dating experiences upon disclosure (e.g., such as being rejected after disclosing health status) or even hearing about another friend who was rejected in a dating relationship for health reasons could lead to a decrease in an individual's desire to date, due to fears of rejection (Klitzman & Sweeney, 2011). Additionally, qualitative research by Howland and Rintala (2001) among 31 women with various physical disabilities (including MS) found that past unpleasant experiences with dating and feelings of rejection led participants to have negative future predictions about dating and increased fear for future rejection, resulting in hesitancy to date.

Relatedly, for all outcomes except communication barriers, greater disability was predictive of worse dating experiences in the models examining both anxious and avoidant attachment. As discussed earlier, longer MS duration and disability are closely correlated, as longer MS duration is typically associated with increasing disability levels over time (MS Society of Canada, 2015). This finding points to the unique and important impact of level of physical symptom burden in predicting more perceived difficulties in dating. It is also consonant with previous research showing that the chances of being single is greater when living with a chronic illness, and that the odds of being single increase along with the severity of physical symptoms (Rintala et al., 1997; Taleporos and McCabe, 2003). Moreover, perceived challenges

to dating are often attributed to physical symptoms by women living with a chronic health condition (Howland & Rintala, 2001; Nosek et al., 2001).

Finally, depression symptoms were not significantly associated with any dating outcomes in the models examining anxious and avoidant attachment, which differs from the findings in Hypothesis 1. Although depression has been shown to produce negative expectancies and can impact social behaviors (Beck et al., 1979; Carvalho & Hopko, 2011), insecure attachment appears to be more strongly related to dating experiences. An examination of the correlations between attachment (anxious and avoidant) and depression showed that there did not appear to be an issue of multicollinearity, with both correlations falling below .50. Therefore, it may be that insecure attachment is a more conceptually related construct than depression in predicting negative dating outcomes. Although depression has been associated with decreased likelihood of forming romantic relationships (Gibb et al., 2011) and social withdrawal, it less stable in nature than attachment styles (e.g., Beck et al., 1979; Carvalho & Hopko, 2011). Insecure attachment has known negative consequences in the formation of and in the quality of romantic relationships (e.g., Bookwala, 2003; Collins & Read, 1990; Feeney & Noller, 1990, Litke, 2006; Schindler et al., 2010). Therefore, once insecure attachment was included in the present analyses, depression became non-significant in the prediction of negative dating experiences.

Hypothesis Three: Body Esteem, Perceived Attractiveness, and Sexual Esteem

Lower perceived attractiveness, sexual esteem, and the total body and sexual esteem scale were each significantly associated with more perceived societal barriers to dating, more dating constraints, and worse overall dating experiences (see Figures 4-7 for a summary). Contrary to expectations, body esteem alone (i.e., the satisfaction with one's body as related to visible illness symptoms) was not associated with any of the dating experience outcomes. This was surprising

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because worse body esteem (as measured with the PDSBE) was linked to poorer confidence in forming romantic relationships in a sample of 326 individuals living with physical disabilities in single time-point study (Lease et al., 2007). It should be noted, however, that body esteem in a group of women living solely with MS has not been examined outside of the current study. Women with MS only comprised 7% of the sample in Taleporos and McCabe's (2002) research on women with disabilities and the influence on dating experiences was not examined. Body esteem may have a different impact on dating outcomes for women living with MS, versus other more visible disabilities. It may also be that body esteem has a differing impact on dating for women living with MS as compared to the other subscales examined on the PDSBE. Specifically, the items that made up the body esteem scale focused on whether participants would rather have someone else's body, rather than their own. Many of the women in the current study identified MS symptoms that either waxed or waned, or symptoms that would be less visible regarding the impact on their body (e.g., cognitive symptoms or bladder or bowel symptoms). Compared to prior research wherein individuals identified living with illnesses that would be more visible, such as spinal cord injury, muscular dystrophy, or cerebral palsy, women in the present study may have identified less with the body esteem scale.

Despite the lack of findings for the body esteem subscale, sexual esteem (e.g., "my sexual expression is limited by my disability"), which specifically focuses on confidence in one's ability to have a satisfying sexual relationship with a partner, was significantly associated with dating outcomes. It is not surprising that worse sexual esteem was associated with more negative dating outcomes for women living with MS. MS is frequently associated with challenges with sexual functioning including difficulty with orgasms, decreased lubrication, genital numbness, bladder and bowel dysfunction or muscle spasticity (Foley & Werner, 2004; Miller et al., 1994; Zorzon

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et al., 1999;). Therefore, it makes good sense that concerns about sexual esteem among this group may be especially impactful, and further, that increased concerns would be negatively associated with dating experiences. The current research extends previous findings, suggesting that negative self-perceptions of one's sexuality should be further examined as potential targets to improve intimate relationship experiences for those with MS.

Additionally, lower perceived attractiveness to others (e.g., "I feel people are not sexually interested in me because of my disability") was also found to be associated with worse dating experiences. While concerns regarding perceived attractiveness to others has not been previously examined among a group of women diagnosed with MS, a number of factors may increase these worries. Specifically, those with MS often suffer muscular symptoms such as spasticity and decreased mobility, which can be quite visible to a potential partner. Such illness symptoms have been found to negatively impact perceived attractiveness to others in prior research among women with disabilities (e.g., McCabe et al., 2003; Taleporos & McCabe, 2001; Taleporos & McCabe, 2005). The current findings underscore the idea that when MS patients have lowered perceived attractiveness these women report more difficulties regarding their dating experiences.

Similar to the non-significant findings for moderation in hypothesis two, body esteem, sexual esteem, and total body and sexual esteem did not significantly moderate the relationship between disability severity and dating experiences. It is not surprising that body esteem was not found to moderate the relationship between disability and dating, as this was not individually associated with worse dating experiences as previously discussed. Regarding the lack of moderation found for sexual esteem, attractiveness to others, and total body and sexual esteem, one possible explanation is that even low levels of poor esteem are associated with negative dating experiences. Specifically, moderation can only be detected if there is a threshold score on

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a scale that leads to a differential impact (e.g., low vs. high sexual esteem). Future research with a much larger sample would be able to test and detect this difference. However, the present study does not support the idea that women with low vs. high body and sexual esteem are differentially impacted on their dating experiences.

Very similar findings were obtained for age, duration of MS, disability severity and depression to those discussed in hypothesis 2. Briefly, younger age was again inconsistently associated with dating experiences in the models, and was significant for overall dating experiences only in the models examining perceived attractiveness and total body and sexual esteem scale. Results were also consistent for longer illness duration, which was associated with generally worse dating experiences in all of models examining body and sexual esteem. However, compared to the models examining insecure attachment, disability severity showed a less consistent relationship to dating experiences in the models examining body and sexual esteem. In models examining perceived attractiveness, sexual esteem, and the total PDSBE scale, disability severity was significantly associated with worse total dating experiences. However, disability severity showed inconsistent relationships with societal barriers to dating and with constraints attracting partners, depending on the PDBSE scale examined. An examination of correlations between PDSBE scales with disability showed correlations at or approaching .50. Therefore, the lack of consistent findings may be the result of construct overlap between the measures.

Finally, identical to the findings for Hypothesis 2, depression symptoms were not significantly associated with dating experiences in any of models examining the PDBSE subscales. Regarding the lack of significance for depression, constructs measured by the PDSBE might have better accounted for the impact on dating than depression, as concerns with sexual

esteem and perceived attractiveness to others may be more directly applicable to dating or

romantic relationships (e.g., Taleporos & McCabe, 2001; McCabe et al., 2003; Taleporos &

McCabe, 2005).

<center>**Qualitative Methods**</center>

Qualitative Research Question

   The qualitative component of the research was guided by the following questions: 1) what impact does MS have on dating experiences of women; 2) how does MS impact the body and sexual esteem of these women, and how does body and sexual esteem influence dating; and 3) does MS play a different role in dating for women 20-40 than those 50-65?

Qualitative Methods

   Research Approach. Given that little is known about the dating experiences of single women living with MS, interviews were used to explore this topic. Specifically, the impact of MS on dating, and the effect of MS on body and sexual esteem for single women was explored. In addition, the differences and similarities in dating experiences of single women living with MS in two age groups were examined (20-40 years and 50-65 years). Twelve women participated in the interview study (six women in each age group).

   The qualitative component of this research borrowed from a phenomenological lens (Flick, 2009). A phenomenological approach looks to capture the "lived experience" of a phenomenon (Beck, 2013; Flick, 2009). While many of the qualitative research questions were informed by the current research, given the limited information on the unique dating experiences of single women living with MS, a phenomenological lens allowed for an open exploration of the women's experiences of dating while living with MS.

   Systematic sampling (i.e., targeting a specific population) was used in order to include single women living with a diagnosis of MS belonging to the age groups of 20-40 and 50-65. The method of concurrent triangulation was used. Triangulation refers to using multiple research methods to gather data (e.g., interview and survey methodology). The benefit of this design is

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that triangulation (through the use of both interviews and surveys) of the data allows for a more precise understanding of the impact of MS on dating among single women (Sobh & Perry, 2006). Moreover, *concurrent* refers to the method of running both methods at one time in order to be able to interpret them together (Creswell, 2009). As there was enough pre-existing research upon which to base the interview and survey, the qualitative interview was not used to inform the creation of the questionnaire component of the study, but, rather to triangulate and add depth to the survey component of the study.

Qualitative Sample. Participants for the qualitative component of the study were recruited from the Multiple Sclerosis Society of Canada or the National MS Society (a large MS society in the United States) with approval from Ryerson University REB. For the qualitative component of the study, two samples of 6 single women with MS (one group age 20-40 and one group age 50-65) were interviewed using a semi-structured interview script (see Appendix 1). The interviews were audio-recorded and transcribed verbatim. The qualitative and quantitative samples were recruited separately. This was done so that the dating experiences of the women in the qualitative study could be gathered during the interviews without being influenced by questions posed within the quantitative questionnaire.

Eligibility criteria. To participate women must have been: 1) between 20-40 years of age or 50-65 years of age, 2) have been diagnosed with MS for at least six months (to ensure an individual has had a chance to date while having MS), 3) self-identified as presently single, 4) fluent in English. As is convention within the present literature (e.g., Simms & Byers, 2009), relationship status (i.e., "dating") was self-identified. Participants who self-identified as "not dating" or "dating, but not exclusively", and also identified as not being in a committed relationship through indicating they are "dating but not in a committed relationship" were

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considered eligible for the study.

Qualitative Procedure. Women who were interested and eligible to participate in the research study were given the option to call the research 1-800 number, or to contact this researcher via the MS study e-mail contact. Participants were then called by this researcher to assess their eligibility and given additional study information. Prior to the interview, verbal consent was obtained by phone and all questions regarding the study were answered. Participants were informed that if they experienced any distress when completing the study they could stop the interview. No participants chose to stop the interview, or reported distress related to participating in this research. Several women identified finding it beneficial to discuss their dating experiences and that it helped them think about their personal goals. Next, the participants chose a time to conduct the phone interview. In total, twelve single women (six in each age group) were interviewed by phone. The phone interviews lasted between 45-60 minutes, and were conducted by this researcher. The interview was semi-structured (see Appendix 1). Upon completion of the interview, the women were mailed a $30 gift card to a coffee shop. Audio recorded interviews were transcribed verbatim by this researcher and two research assistants. Next, the transcripts were imported into NVivo (Flick, 2009).

Thematic analysis was used to examine the data. Thematic analysis involves identification of specific themes in the data (Braun and Clarke, 2006). In qualitative research, interviews are "coded," meaning recurring themes or statements are found amongst the various interviews. This codebook was used to keep track of when these themes were identified within the interview (Braun and Clarke, 2006). Specifically, this researcher and an additional coder with expertise in MS met to create an initial codebook (a preliminary, but flexible list of possible interview themes). While there was enough existing literature to build a coding template, given

the somewhat early stages of the literature, it was important to be able to add to, and revise the

coding template based on the findings of the qualitative study. Therefore, in the current study the

previous literature was examined and subsequently a draft codebook was created. Interviews

were then read and the codebook was revised accordingly in order to accommodate new or

unanticipated themes (Appendix 1). This researcher and the coder met after the coding of the

first transcript, and then again after the second and third transcripts to ensure reliability of the

codes, discuss coding differences, and refine the codebook as needed. Next, each coder

independently coded each transcript (i.e., identified sections of the transcripts that related to the

theme). A frequency count for each code was completed and the inter-rater reliability between

coders was calculated. The analyses discussed are the result of the finalized codes. Coders also

met to discuss themes arising during the interviews, and whether saturation (the stage in data

collection where further interviews are no longer leading to new themes or information) had been

reached. As very few adjustments were made to coding scheme, saturation was deemed to be

reached after the 12 interviews were completed when no new themes were located in the last

several interviews (Flick, 2009). The inter-rater reliability was calculated using percent

agreement, and was quite high, with an average reliability of 98.8 %.

Qualitative Results: Dating Experiences of Single Women with MS

Age, MS, and Dating

Throughout the interview, women in the younger age group explicitly commented on how dating experiences were influenced by age-related norms and goals. Interestingly, the same issues were not raised by women in the older age group. Within this theme, two subthemes were identified: 1) MS means a different developmental trajectory and 2) MS, Family Planning, and Consequences for Dating. Please see Figure 8 for a summary of themes from the qualitative coding.

MS means a different developmental trajectory. Half of the women in the younger age group commented on MS altering their developmental trajectory. Specifically, these women identified feeling that their life experiences often differed from their peers, and their life course was altered because of living with MS. This change in life course often involved discussion of missed opportunities to meet significant others. This theme was illustrated by one younger participant, age 33, who noted a lack of understanding from her peer group: "They…don't understand…they don't want to have to like deal with it. Everyone's like oh lets go have fun, let's go drinking. I'm like no I can't, I'm on steroids. I have to stay home."

Another young woman, age 33, raised the issue of missed relationship opportunities, expressing that she felt she has lost out on important life and relationship milestones due to the early onset of her MS:

> "I think if I hadn't been diagnosed so young things would be have been different. I know a lot of people who get diagnosed in their 40's or even in their 50's. They already had their life sort of down. You know they already had a career, education, a lot of them already had husbands or wives, or you know children and stuff. I never had that chance.

You know I think getting diagnosed so young sort of makes my experience different from those who were diagnosed as you know, adults…I didn't get it when I was a kid, but I basically grew up with MS. You know. All those years you really form yourself as an adult were completely overshadowed by me having MS."

Table 8

Average Frequency of Themes and Total Number of Participants Reporting Theme by Older (n=6) and Younger Age Group (n=6).

	Younger Age Group (20-40)		Older Age Group (50-65)	
	Average Frequency	Total Participants Reporting Theme	Average Frequency	Total Participants Reporting Theme
Age, MS, and Dating				
MS Means a Different Developmental Trajectory	1	3	0	0
MS, Family Planning, and Consequences for Dating	.5	2	0	0
Barriers to Dating				
Cognitive and Emotional Barriers	1.8	5	2.2	6
Financial and Practical Barriers	1.2	3	1.8	4
Physical Symptom Barriers	5.3	6	7	6
Prejudice and Misconception About Illness	3.2	6	3	5

Coping Strategies for Dating				
Adjusting Dating in the Context of MS	3.7	6	.8	4
Self-Acceptance	1.5	3	.7	2
Self-Protective Dating Behaviours (Avoidance and Safety)	1.8	5	2.3	5
Disclosure in Dating				
Forced Disclosure Due to Symptoms	.7	1	.8	3
MS Like Hiding a Secret	.3	2	.7	1
Strategies of Disclosure	2.3	6	2.2	5
Dating and MS Body and Sexual Esteem				
MS Symptoms and Sexuality	1.3	5	3	6
Negative body esteem and experiences	1	4	2.5	6

Negative Cognitions about MS and Dating				
MS as Baggage	1.6	4	1.2	4
Negative Self-Worth Due to MS	.7	3	1.3	5
Uncertainty in MS and its Impact on Dating	1.2	4	.2	1
Partner Behaviour in Dating Relationships				
Lack of Partner Support Due to MS	.7	4	.2	1
Relationships Ended Due to MS	1.2	3	1.2	2
Supportive Reactions to MS	1.2	5	.3	1

Figure 8. Visual Representation of the Study II Coding Scheme
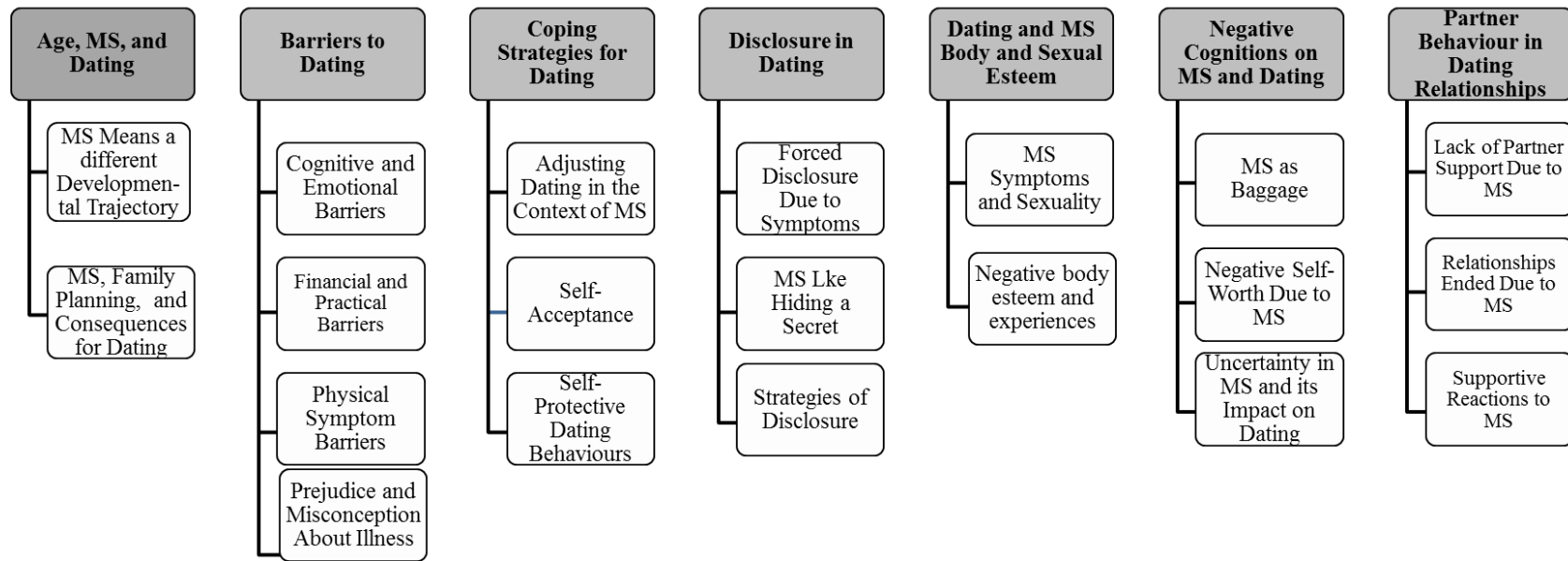
MS, family planning, and consequences for dating. Women in the younger group spontaneously discussed how MS impacted their family planning choices. Specifically, women raised the issue that living with MS had led to them to reevaluate or change their thinking of family planning in a different way. This experience was reflected by one woman, age 29, about how living with MS led to hesitation in starting a family:

"I don't know if I've come to peace in my own head yet. I don't know if biologically whether I want to, or should. I don't know if it's going to impact my condition or my body… You've got to wonder – first of all do I want to pass this gene on if it's genetic? It probably – I don't know? Will I be ok to have a kid if I can't feel my legs, or I can't see?...So I mean these are questions I actually haven't answered yet…I think it's a simpler question for other people. 'Do you want to have kids yes or no?' is a simpler question for many. Maybe I'm wrong – I don't know. But it's certainly not a simple question for me."

It also seemed that living with MS not only impacted how some younger women thought about future family planning, but also sometimes led to experiences of rejection and feelings of frustration when dating, as illustrated by this woman, age 31:

"I also dated someone else, who I told I had MS, and then he told me about a week later he'd done the research and his major concern was about having children. His biggest concern was that he had read there's a chance that I might pass MS on to the kid… and that [made me mad] because I don't really think there's that much research to support that."

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Barriers to Dating

Women in both age groups frequently discussed the various barriers they encountered to dating, which are captured by the following themes; 1) emotional and cognitive barriers, 2) financial and practical barriers, 3) physical symptoms barriers, and 4) societal prejudice and misconceptions.

Emotional and cognitive barriers. Women identified cognitive or emotional symptoms resulting from MS, which created increased barriers to dating. Both cognitive symptoms such as forgetfulness, as well as difficulties with mood or anxiety are often one of the many symptoms of MS. This was an issue commonly discussed in both age groups. One woman in the younger group, age 33, spoke to the difficulty that her cognitive symptoms (i.e., forgetfulness) can create in the early stages of dating:

"[There is] the problem with word recollection and slurring and confusion that happens with MS. It can sometimes make you sound less intelligent then you actually are, when you're trying to get to know someone... one of the symptoms of my MS where sometimes when I get stressed out I don't recognize things that I should…I was having a problem just operating my own phone to get directions during a date."

Likewise, several women in the older age group also discussed how challenges with cognitive symptoms impacted their dating experiences, especially when forming new relationships, as this 62-year-old women remarked:

"And then the second big thing is the cognitive thing. I had a memory that was iron clad, and I don't anymore. To be fully attentive, and responsive, it's encumbering. It's just the brain function. I think that's a huge part of my challenges currently about dating."

Further, several of the women in both age groups also addressed the emotional symptoms and challenges of living with MS, and how these emotional issues can create challenges to dating. This was described during an interview with a woman from a younger age group who experienced uncontrollable and often un-cued laughing and crying (i.e., a not uncommon neurological symptom of MS known as pseudobulbar affect). Here, this 33 year old woman discussed the difficulties such neurological symptoms present in a dating context. "Uncontrollably laughing for no reason is also not really socially acceptable. Or you know, just sometimes…start crying, I look way more upset than I actually am for even like a minor disagreement."

Women in the older age group also spoke to the challenges of dating while coping with the emotional symptoms of MS. One 50 year old woman spoke to her experiences of living with depression and anxiety symptoms and their role in her decisions to date. "I have severe depression and anxiety. So I wasn't ready emotionally and physically to have another relationship. So that's why I prefer to be alone."

Financial and practical barriers. Women in both age groups also spoke to the practical or financial barriers to dating they encountered. For this theme, women noted challenges to dating resulting from financial hardships or practical barriers that got in the way of dating. Both younger and older women spoke to the limitations they experienced in their abilities to meet new potential dating partners. The following illustrates one 33 year old woman's difficulties due to practical barriers she experienced in meeting dating partners. "I mean sometimes I feel like the only place I'm going to meet anybody would be like in a neurologist's office, you know...it's just it feels like…almost the only time I go out anymore."

Physical symptoms barriers. Perhaps one of the most cumbersome issues in dating noted by women in both age groups was that of physical symptom barriers. All of the women who were interviewed identified struggling with the frequent negative impact of their physical symptoms on dating. One physical symptom that women frequently mentioned as bothersome was MS-related fatigue. Both a woman from the younger and from the older group spoke of the difficulties they faced respectively. The younger woman, age 33 noted: "Well, one of my biggest side effects is fatigue, so I never know what day I'm going to be okay to do stuff, so it makes it very difficult to plan to go on a date." Another woman age 62 also remarked on her fatigue:

"You never feel rested, you never feel really energetic in the way that you did when you were well…But, it's not having enough regular energy or routine because everything is always so up and down with MS, it's pretty hard to express what you're presenting to the dating world. You can't really say on any given day how you're going to be."

Women also identified concerns over the visibility of their symptoms, or possible embarrassment in dating contexts about some of their physical symptoms. Such symptoms led to hesitancy to participate in dating situations. As one woman, age 56 expressed:

"Now I'm having trouble controlling my bladder and my bowel, I'm a bit nervous about being out in public, especially sitting in a movie theatre for three hours…I think there are both psychological barriers to relationships with MS and physical ones. Physical ones are externally, visible symptoms, and then the internal things are our fears about being embarrassed by our symptoms – am I going to trip and fall, am I going to lose control of my bowels?"

Another woman, age 31, shared concerns that her symptoms of MS were now noticeable to others.

"I lost the use of my left side, and that was devastating for me because I've always been

an active person, and all of the sudden I had something that was visibly wrong with me

where I looked different than other people."

Finally, women in both age groups spoke about how the physical limitations or symptoms

resulting from their MS limited their ability to participate in the dating world, or made such

experiences more challenging. This 31 year old woman in the younger age group noted that she

struggled with participating in certain activities due to her sensitivity to heat and cold resulting

from MS.

"There was one fellow I was seeing and he loved doing summer stuff, yeah well, we met

in the winter time…summer time came and he wanted to go boating all the time and I'm

like yeah that's great, but I'm going to have to pass. You know. And in the summer time

I shrivel up…I'm done…When I overheat my eyes go double vision and blurry. And so if

I push it too hard I can't see."

Prejudice and misconception about illness. Finally, women in both groups discussed

their negative encounters with prejudice and misconceptions as barriers to dating. Here, one

younger, age 33, described some misconceptions about her MS symptoms, and how this

impacted her dating prospects:

"I have a lot of blood draws…and IV Infusion so a lot of needle work. So often I have

like a lot of bruises and bandages, you know... So I mean I have had people think that I'm

a drug user because I have needle marks on my arm and bruises everywhere and I'm

falling down and I can't see anything, like 'I don't know what's up with that girl but I'm

staying away from that'…It just adds into the perception that maybe I'm on drugs versus

I have a health condition, people don't understand that there's a mental component to

MS."

Other women noted that unfortunately they encountered negative perceptions and

stereotypes about having a disability. This was something noted by women in both the younger

and older age groups. One 33 year old woman noted:

"It is definitely more difficult to date, partly because of fatigue and the pain, and because

of people's views towards disabilities. A lot of people want someone who is healthy, who

can keep up with them, and they're afraid of getting into a relationship with someone

they might have to take care of, which, I don't want anyone to take care of me, but

unfortunately when you do get involved, even in a friendship with someone, if they see

you not doing well, they want to take care of you. So, there are those barriers where

people see you more as a challenge to date and maybe not worth it."

Coping strategies for dating

During the interviews, women also spoke about how they dealt with the challenges of

dating with MS. These were conceptualized as coping strategies comprised of: 1) adjusting

dating in the context of MS, 2) self-acceptance, and 3) self-protective dating behaviours

(avoidance and safety)

Adjusting dating in the context of MS. Women noted making changes to their approach

to dating, specifically by choosing partners more carefully and by making self-care a priority due

to their MS. Women were often choosier with dating partners and they discussed how MS altered

their dating choices to select more supportive partners. As one younger woman, age 29 phrased

it:

"I think it certainly impacts my judgment of my requirements of what I would consider a good mate. Because where I maybe a few years ago I would have wanted somebody more adventurous now I need somebody who is capable of being a caretaker. And not 100% like I'm not going – maybe it just swings a little bit more in that direction than it may have otherwise."

Within this theme of adjusting dating in the context of MS, other women also expressed that they felt they needed to prioritize MS above dating. Here, dating was often seen as taking a backseat to making time to maintain their health and participate in medical care and follow-up related to their MS. One younger, age 33 stated:

"The most important thing in my life is that I have to go to a doctor's appointment or if I have to go in for treatment, that has to take priority over anything else...I feel like I'm married to MS you know. That's going to be with me forever."

Self-acceptance. Several women noted a sense of self-acceptance despite the challenges of living with MS. This was a sentiment articulated by women in both groups. One woman who as 62 years of age expressed such a strategy:

"It's a part of acceptance; it's a part of living with illness and going through the stages of redefining yourself and your relationship to illness. I do think that that's not a simple process, and in that development, how I might have seen myself before is not connected with the current reality, and so there's tons of places where I think you have to come to a deeper self-knowledge and different self-knowledge to know who you really are and understand what's happened to you, and know to present yourself in an honest and compassionate way with yourself. That really has taken some time."

Self-protective dating behaviours (avoidance and safety). Finally, some women spoke of needing to protect themselves from possible negative outcomes of dating. This was understood as representing self-protective dating behaviors (comprised of avoidance and safety behaviors). This was a common issue raised by women across age groups. One of the women in the older group, age 56, discussed her hesitancy to date as a strategy to avoid being emotionally hurt:

> "I think that part of the barrier for relationships isn't just... it's also an internal thing for those of us who are having problems having a relationship, it's an internal thing with our expectations and our fears of being rejected again. So some of it is guarding myself."

Meanwhile some women worried about the emotional and health consequence of becoming invested in a romantic relationship, as is illustrated by this comment from a woman, age 31, in the younger age group:

> "One of the first things that my doctor had said to me when I first was diagnosed was that it's incredibly important to evaluate and be cautious about who you have in your life because emotional stress is one of the biggest triggers for MS relapses. So, what's always been in my mind is, is this relationship going to hinder me in any way. If I get too attached to someone and I get hurt, what's the consequence?"

Disclosure in Dating

Women had many experiences with disclosure of their MS that they shared during the interviews. Specifically, they often described challenges they faced with how and when to disclose their MS. In addition, women at times spoke to the fact that sometimes disclosure or their illness symptoms was imposed upon them either by others or by circumstance.

Forced disclosure due to symptoms. One type of experience that often occurred for women was conceptualized as a type of forced disclosure due to symptoms. This was identified as occurring when women felt they had to disclose because their symptoms were noticeable to others. Often when women felt they were forced to disclose, they felt comfortable with the process. One women, age 54, spoke to the visibility of her illness causing her to be asked about her medical condition.

"I was on my scooter…we were talking, and he asked me, 'Do you mind if I ask you…' And he stopped right there, so I said, 'ask me what's wrong with me?' He said 'Yah'. 'I said I have MS.' I don't mind. Cause I have it and it's right here, and it's not going anywhere. I have MS. You want to deal with it or you don't."

One woman from the younger group (age 29) discussed how she had disclosed to a partner early in their relationship due to an MS attack.

"I had an attack right at the beginning of the relationship which meant that I had to accelerate the disclosure time line. But the relationship went on to last a full year longer so I don't think that had anything to do with it ending."

MS like hiding a secret. Some of the women felt that they were holding on to a secret until they decided to disclose their MS. Unlike the experiences of forced disclosure of MS, this was typically described as a having a negative impact on the women and how they felt about dating. This issue was raised by women across both age groups. As a woman age 33 stated:

"Having MS is sort of like having this big deep dark secret because at some point you're going to have to come out of the closet basically, and tell them that look I'm chronically ill, it's never going to go away, no cure you know I never know how I'm going to feel."

Strategies of disclosure. In other instances women spoke to the process of disclosing such as when and how they decide to disclose their MS. This was understood as representing strategies of disclosure, and both groups brought this up with relatively equal frequency. Women in both groups discussed difficulties deciding how and when to disclose their MS to dating partners. As one woman age 54 stated: "I thought about doing one of those online dating things, but I'm afraid, like what do I put down? Do I put down in the description of myself that I have MS? How would I do that?"

Meanwhile, another woman from a younger age group, age 33, expressed the same sense of concern over when and how she might bring up her MS with dating partners:

"There's also that I never know when do you tell someone that I have a chronic illness; is it before you go out on a date? Is it the first date? Third date? …I used to wait until at least the first date to explain my situation to someone. Now, because that would always bug me, I'd be terrified going to the first date that it would be the last date, or that it would end early because of that. Right now, on my dating profile I have it right there. It's right up front saying that I have MS…that way I don't have to fear that rejection during the date…I have to find good ways of explaining such a really confusing illness, so I think I've become a master of trying to explain it to people."

Dating and MS body and sexual esteem

Many women experienced changes to how they thought about their bodies, or even how they experienced their sexuality within their relationships. Within this, two topics were identified: 1) MS symptoms and sexuality, and 2) negative body esteem and experiences.

MS symptoms and sexuality. Many women felt that their MS did impact their sexual functioning within relationships. While both age groups mentioned this topic, the frequency of

discussion was greater among the older age group. Most women voiced that some of their symptoms made expressing their sexuality with a partner somewhat more challenging. One woman, age 39, noted the impact of MS on limiting her ability to become aroused with a partner, and the challenges this posed to her intimate relationships: *"When I was with that other boyfriend I wasn't always sexually aroused you know, like I should have been...it just takes a lot to get me there."*

Meanwhile, additional concerns were raised about pulling back a bit in searching for intimacy, both as a result of their feelings regarding their MS and how it impacts their ability to sexually express themselves, but also the negative impact of a lowered libido in seeking sexual relationships. One woman age 62 discussed how she felt both her MS and her age contributed to seeking fewer sexual relationships.

"Well, in that MS has let me be less assertive about obtaining a partner. Even though I have more freedom than some people, I don't present myself that way. I don't give enough good clues to suggest that I'm interested sexually, and there's some protection from the vulnerability you feel having a disability. When you're younger, your hormones and your libido can take [of themselves], and when you're older and you have a disability, it's more complicated. There's not that kind of ready sexual energy as much, and that's both aging and MS."

Negative body esteem and experiences. Many of the women across the age groups reported negative body esteem and experiences. Specifically women voiced their concerns about their physical appearance due to MS and the consequences this had on their dating. However, the frequency of these comments regarding negative body esteem and experiences differed between

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groups, with women in the older age groups mentioning this topic more frequently. One woman age 62 discussed how mobility changes relating to her MS has changed her self-confidence:

"Even two years ago, I could walk without a cane, and I can't now. I think that my confidence has changed; I think that's really the key thing. There's shame and embarrassment about having the disease... I would say what has changed dramatically is my confidence, presenting myself. My confidence about my appearance is waned. I have to really work at being okay with my limitations."

Another woman age 56 spoke to how her body esteem was impacted by living with MS, and how this in turn altered her feelings of attractiveness to potential dating partners.

"I would say that it's probably changed the way I view my body... I'm not energized and energetic and I don't work out; and when I do walk, I'm just walking at a slow grandmotherly pace that my body doesn't appear toned, and trim, and healthy, like it might have before I had MS, where I had nice muscle tone …I would guess too that my gait is different and to me, and my posture. My gait and my posture is different and uh – I know I'm [in my 50's], but to me I feel like I have… my demeanor and appearance because of the way I feel and walk is of someone a lot older than me and therefore it feels less attractive."

Negative Cognitions about MS and Dating

During the interview women described how they sometimes experienced negative thoughts about dating with MS or about themselves that created increased challenges in dating. We conceptualized these cognitions as: 1) MS as baggage, 2) negative self-worth due to MS, and 3) uncertainty in MS and its impact on dating.

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MS as baggage. Most women within each age group identified feeling like MS was a type of "baggage" that they were bringing into a romantic relationship. This concern was raised with relatively similar frequency with women in the younger and older groups. One younger woman, age 33 spoke the theme of "MS as baggage."

> "Just the guilt I guess of you know interrupting someone else life with your problems? I mean it's like having this giant baggage that you have to carry with you in every single relationship. Whether it's a romantic relationship or just like a friendship. They care about you, and then they have to watch you go through all these rough patches that can happen at any time and yah. You know? It's hard."

Negative self-worth due to MS. Several women noticed that they held internalized negative beliefs about themselves related to living with MS. This was organized as having some negative beliefs about themselves due to MS and was labelled as "negative self-worth due to MS." Women across both age groups raised this concern, but it was more frequently discussed by women in the older age group. One younger woman, age 33 noted how living with MS has resulted in viewing herself differently:

> "Before the MS, I definitely always felt like an equal, I always felt like I could stand on my own, I take care of myself, I pay for my own stuff, and get to places myself. Now, even if it's not true, I feel like I'm not as much of a person. You know what I mean? Like, sometimes I feel I'm not good enough or I don't feel as independent as I would like. I don't feel like I take care of myself as much as I would like, and it's very frustrating."

Uncertainty in MS and its impact on dating. Finally, the women spoke about living with the uncertainty of MS and how this experience impacted dating for them. Uncertainty

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seemed to be raised more commonly by younger women. A younger woman, age 33, spoke about the difficulty of living with uncertainty about her day-to-day symptoms and how these impacted her life. Specifically she addressed the worry about how the uncertainty of living with MS created difficulty in forming relationships with others, who then also have to struggle with such uncertainty.

> "When you have something like MS that's going to be chronic and you know it's unpredictable and you don't know how it's going to go, you never really ever get completely over having it. I would imagine if I had something like and amputation, you know, I just lost my arm, eventually that would just be over. You know, yah you lost your arm, it's going change your life, but you kind of deal with it and you get over it cause it's never going to happen again you know? With MS, you never know what's going to happen, so it really does take precedence in every day of your life, you know, how am I going to feel in the next 10 minutes. You know so it's sort of a constant almost paranoia almost? That you know people do pick up on that eventually they don't know how it's going to be or what's going to happen and it does get stressful for the other people in your life, and in particular if they do care about you. You know, they can't handle it either and they don't really know how to fix it. Everyone wants to fix you and there's no fixing you, and it makes then frustrated and it does really impact them. And the more they care about you the worse it is."

Another young, age 31, woman spoke of her difficulties in making plans when dating due to the unpredictable nature of her MS symptoms.

"It makes me nervous because it's so unpredictable and I don't know one day to the next if I'm going to be able to keep plans or what if one day I can't walk or what if another day I'm completely numb and talking funny and stuff, what are they gonna think?"

Partner Behaviour in Dating Relationships

Women also gave examples of dating experiences they had in the past regarding dating partner behaviour. This was captured by: 1) lack of partner support, 2) relationship ended due to MS, and 3) supportive reactions to MS.

Lack of partner support due to MS. Several women spoke about a lack of support from dating partners in the past. This appeared to be an issue identified more frequently within the younger age group. A woman in the younger age group (age 33) mentioned a specific example of the lack of support she received in one of her past dating relationships: "Probably after the first time I was hospitalized and a year after my diagnosis, cause…yeah...he never came to the hospital once."

Relationships ended due to MS. Another challenge experienced by women in both age groups was dating relationships ending due to MS. One of the women, age 62, provided some examples when dating partners ended the relationship due to her MS.

"When it seemed like it was going somewhere and I was very interested, I said 'I think you'd better know this'…when he found out, he just said 'you know, with the distance and everything, I'm thinking maybe it'd be best if we just remain friends and not continue a romantic relationship,' and that was very disappointing. The other guy…read up on it and he said 'I'm not willing to invest in a relationship that has this kind of risk, or that has this kind of potential risk.'"

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Supportive reactions to MS. Despite some of these more disappointing dating experiences, other women made note of supportive responses from dating partners. Supportive responses were mentioned more commonly among the younger age group, however, women in the older group also spoke to this experience. A younger woman, age 29, described an experience where a dating partner was very supportive:

> "I was dating a guy at the time. And no he was really supportive. He just kind of dropped work and came to be with me for the afternoon which was nice. It was a great opportunity for him to show that he cared. So that was actually, it was a nice moment for us to bond a little bit…he didn't really know how to deal with it but he was just kind of there. And I'm not sure how I would have wanted it dealt with? But he was there and that was okay."

Qualitative Discussion

MS and Dating Experiences

The current qualitative research used a phenomenological lens, as this best allowed from the questions to be guided by previous research, as well as incorporating unique information from women who participated in the interviews. The qualitative interviews sought to increase limited information presently known about the dating experiences of women living with MS. Of particular interest was to better understand how MS impacts the dating experiences of women, the impact that living with MS has on body and sexual esteem, and how this in turn impacts dating, and whether these experiences differ between younger and older age groups of women. Women in the study spoke of encountering more barriers to dating; societal, emotional, physical, and financial. They also often noted the strain of living with MS on their sense of body and sexual esteem, and that this can lead to further difficulties to dating. Additionally, women spoke of both methods of coping with and adjusting to living with MS, as well as negative thoughts about dating with MS that they often grappled with. As a whole, women across the age groups showed many more similarities than differences, often speaking of common experiences when dating that seemed to cut across age.

In the present study, four themes were identified from the interviews as representing common dating barriers experienced by women with MS. First was that of cognitive and emotional barriers to dating, whereby women identified both cognitive symptoms such as forgetfulness, as well as emotional difficulties such as anxiety increasing dating barriers. As noted previously, both depressed mood and cognitive symptoms are common symptoms of MS (e.g., Arnett & Strober, 2011; Paparrigopoulos et. al., 2010). While prior research has found that mood and cognitive symptoms are associated with various negative outcomes such as lower

quality of life and sexual functioning (Akkus & Duro, 2011; Barak et. al, 1998; Bronnere et al., 2010), the present research indicates that these also have an important negative outcome on dating for women with MS. The finding that such symptoms do in fact increase barriers to dating is important, as this was the first study to qualitatively examine how such symptoms of MS impact women's dating experiences.

Women in the present study often identified physical symptoms as cumbersome to dating. This finding is of interest as to date, despite knowing that individuals living with MS often experience various symptoms associated with their illness such as fatigue and decreased mobility (e.g., Hennessey, Robertson, Swingler, and Compston, 1999; Lee, Newell, Ziegler, Topping, 2008; MS Society 2010; WHO 2008), no research study had examined the impact of such symptoms of women living with MS. These qualitative interviews offered a unique opportunity to uncover physical symptoms that may feel especially difficult for women diagnosed with MS while dating. Each of the women spoke to the challenges that the physical symptoms of MS posed to dating. One symptom that was often raised was fatigue. While the experience and influence of fatigue had been explored in prior research (e.g., Lee et al., 2008; Olsson, Lexell, & Soderberg, 2004), and increased fatigue has been found to be associated with lower quality of life (Krupp, Serafin, & Christodoulou, 2010), the impact of MS-related fatigue on dating had not yet been explored. Prior research found however, that increased fatigue has a deleterious impact on social functioning. Specifically, in a group of 237 (169 women and 68 men) living with MS on average for 10 years, increased levels of fatigue were associated with decreased social functioning (as measured by the SF-36) (Pittion-Vouyovitch et. al., 2006) Further, in a review of the literature by Shah (2009), it was reported that fatigue creates increased barriers to participating in activities with friends and family, hindering socializing. Therefore,

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prior data underscore the negative impact of fatigue on social functioning in general, and the current findings extend this relationship to dating.

The women also expressed feeling a sense of unease when physical symptoms were noticeable to others. Previous research has found that physical symptoms (Rintala et al., 1997) and increased stigma associated with the visibility MS-related physical symptoms have led to more difficulties dating (Howland and Rintala, 2001). Building upon these studies, the current research shows that single women with MS experience their physical symptoms as negatively impacting their dating experiences. Moreover, the undesirable reactions of dating partners to these symptoms also negatively influenced their dating experiences. Such findings add substantively to the literature, as the influence of physical symptoms on dating experience for women with MS has not been explored. Further research should examine these experiences in more depth, and additionally what supports might help women feel better equipped for the dating world while living with MS symptoms.

Along with the burden of physical symptoms, challenges with practical barriers and financial barriers were identified by women as influencing dating in a negative way. For instance, participants reported they often did not get out to meet new people, and instead spent excessive time at medical appointments or suffered financial hardships as a result of their illness that made dating activities less affordable. This finding extends previous literature on the financial hardships and accessibility challenges often faced by women with MS, and captures how it can influence dating. Specifically, it is well known that MS can create increased financial hardship given the various physical and cognitive symptoms impacting day-to-day functioning (e.g., Jennum, Wanscher, Ferericksen, & Kjellberg, 2010). In addition, physical barriers in the environment can lead to inaccessibility and a resulting decrease in activities (i.e., Vanner, Block,

Christodoulou, Horowitz, & Krupp, 2008). Indeed, prior data show that women living with

chronic health issues face a number of environmental barriers that impose problems to social

activities (Howland & Rintala, 2001; Rintala et. al., 1997). The current data add to the literature

by showing that financial difficulties, as well as limited accessibility to activities and locations

were troublesome for many of the women interviewed, and increased the complexity and barriers

to dating for women with MS. Again, these experiences cut across age groups, lending to the

conclusion that it is in fact the experience of living with MS, rather than age which is most

impactful in the dating experiences of these women. Further research might examine how to

increase accessible dating opportunities for women.

Unfortunately, an important qualitative theme identified was the negative experiences of

MS-related stereotypes, societal misconceptions, and prejudice these women often reported

encountering. Such concerns have been previously identified by other groups of women living

with chronic illness. For example other research has previously found that individuals may hold

the belief that someone with a disability is not interested in a sexual relationship, or may make

negative judgments about dating someone with a disability (e.g., Dennison et al., 2010; Howland

& Rintala, 2001; Rintala et. al., 1997). Of note is that prior research looked at dating experiences

with a broad array of physical disabilities, rather than the unique experiences of women living

with MS. The present research focused on the distinctive experience of women living with MS.

Specifically, women indicated that the visibility of their MS symptoms and misperceptions or

negative judgments made by others can create increased barriers to dating, in both younger and

older age groups. Again, research into programs to help support women with such challenges, as

well as public education about MS would be beneficial.

Women also spoke of various coping strategies they used in the face of such challenges of dating with MS. These strategies included making adjustments to dating in the context of MS, such as being more selective in seeking dating partners or making their health a priority over dating. Participants also described focusing on self-acceptance, and on self-protective dating behaviours, which were aimed at protecting themselves from suffering possible negative consequences of dating. Some prior data have found that women living with MS have reported using positive coping strategies. Reynolds and Prior (2015) completed a series of qualitative interviews examining how women with MS reporting coping with their illness. The women in this qualitative study were living with MS on average for 5 years and identified various adaptive strategies such as benefit finding (finding some silver linings within challenging experiences or their illness). Further, Mohr and colleagues (1999) completed a study with 94 participants living with MS, which explored how individuals with MS learn to cope in an adaptive manner to the challenges posed by such an illness. Again, the concept of benefit finding (such as having a deeper appreciation for life) was found. Therefore, additional research has found coping strategies similar to those identified in the current research. The current findings suggest that both younger and older women show resiliency and make use of coping strategies to manage stress that could be associated with dating. It would be of interest in future research to have a control group without MS to determine whether women with MS are more self-protective and selective of dating partners compared to women not living with the reality of a chronic illness. In addition, it may be fruitful to investigate which coping strategies women may have found to be most effective, and how these might be applied to potential supportive interventions for women dating with MS.

Participants also commonly voiced their thoughts regarding disclosure about having MS in dating contexts. Specifically, women often described feeling forced to disclose information about their illness to potential dating partners. At times, the issue of illness was brought up by a potential dating partner in a way that felt invasive. On other occasions, women noticed it was a flare up of their illness that preceded an earlier disclosure than they had initially planned with their dating partner. Some women described feeling they were not being completely truthful with dating partners until disclosing, and the discomfort this created for them, almost as if they were hiding a secret. Moreover, various other women spoke about feeling somewhat uncertain of the process to follow for disclosing their MS status; specifically, when one might disclose, how the process of online dating might be influenced by whether one waits to disclose, or disclosures on the dating profile itself.

To date, an exhaustive search of the literature resulted in no research that has examined the disclosure of MS in the context of dating. Quinn and Earnshaw (2011) reported that those with "concealable stigmatized identities" (for example HIV, AIDS, or chronic illness that may not be immediately visible) struggle with difficulties disclosing their illness, and suffer negative psychological consequences such as depression and anxiety (Quinn and Earnshaw, 2011). Other research has examined disclosure of high genetic risk for a serious illness to potential dating partners. Some data show that individuals face questions of whether, when, and how to disclose when dating, and whether this disclosure will lead to interpersonal rejection, or rather, be met with acceptance (Klitzman & Sweeney, 2011). Clearly, women in the present study also struggle with such questions, and this was consistent across the age groups. Additional research is warranted to build on the current finding that women with MS often identify navigating disclosure in dating contexts to be confusing and a source of stress. Further, future research

might also investigate how women could address these disclosure concerns, and prepare them better for such occasions of disclosure.

During the interviews women also spoke about negative thoughts about MS and dating. Many women in the study discussed MS as a kind of baggage that they were worried about bringing into future relationships. Furthermore, women described a sense of negative self-worth related to MS. Prior research has found that negative thoughts related to MS can lead to worse quality of life (e.g., Jopson & Moss-Morris, 2003). Women also described their concerns regarding feelings of uncertainty related to MS, both in terms of feeling a sense of uncertainty of how their illness may impact future relationships, but also with creating challenges in scheduling dating opportunities. As with self-worth, uncertainty has also been shown to negatively effect adjustment to MS (e.g., Dennison et al., 2009). However, these data are the first to show that both negative self-worth and uncertainty about MS can influence the formation of romantic relationships among those with MS. Based on the present interviews, women in both age groups identified negative appraisals about their MS and its influence on dating, which they felt worsened their dating experiences. These experiences were similar across the age spans, but negative self-worth was expressed more frequently among older women. Future research might investigate whether there could be a place for cognitive-behavioural techniques to help women think more flexibly about themselves regarding MS and dating, and perhaps begin to question such negatively held self-beliefs.

Regarding behaviors of dating partners, women in the current noted a variety of experiences, ranging from supportive relationships and reactions to unsupportive reactions. Further, there were unfortunately a significant number of women who identified that at times relationships were ended as a result of their MS. Indeed, prior research has found an association

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between relationship termination and chronic illness in a sample of 322 women diagnosed with either a tumor or MS (Glantz et al., 2009). However, it should be noted that this experience did not occur across all the women in the current study, and several voiced supportive experiences in dating. Rather, unsupportive dating reactions seem to be one possible outcome, along with supportive dating experiences. Additional research should further this phenomenon in dating relationships among women living with MS.

MS, Body and Sexual Esteem, Dating

In addition to the general impact of MS on dating, the current research sought to gain insight into how women living with MS perceive their body and sexual esteem to be effected by MS, and in turn, how these in turn influence their dating experiences. Women in the present study mentioned concerns regarding the visible nature of some of their MS symptoms, feeling this had a detrimental influence on their body esteem. Despite the limited research on body esteem among those with MS, other groups with active physical health issues (such as spinal cord injury, cerebral palsy, arthritis, and fibromyalgia) have been found to experience negative impact on their body and sexual esteem (e.g., McCabe et al., 2003; Taleporos & McCabe, 2001; Taleporos & McCabe, 2005). Lower body esteem has been shown to be associated with a decreased chance of being in a romantic relationship (Lease et al., 2007). The present qualitative research confirms that single women with MS identify challenges with both sexual esteem and body esteem in the context of dating situations. Among individuals with MS, but especially women, prior research has reported significant concerns about being "sexually rejected". This concern about being rejected by a potential partner can be associated with difficulties forming relationships, or with sexual dysfunction itself. Additionally concerns regarding symptoms of sexual dysfunction related to MS such as bladder or bowel dysfunction were further associated

with a fear of being sexually rejected (Quinn, Flood, Mendelowitz, & Foley, 2015). Not surprisingly, apprehensions regarding sexual intimacy negatively affected dating experiences for participants in this study.

In particular, women reported that MS at times worsened their level of sexual desire and sexual functioning; a finding that has been commonly reported in the literature examining MS and sexuality (e.g., Foley & Werner, 2004; Miller et al., 1994; Zorzon et al., 1999). Although women in the study generally believed MS did influence their experience with their sexuality, older women spoke to this more frequently. The current research should be extended, both to replicate the current findings, but also to examine how interventions might be tailored to women who are dating and struggling with such concerns to help them cope with and overcome such concerns regarding sexual esteem and body esteem in the dating context.

MS, Dating, and Age

Overall, women in both age groups expressed more similarities in their dating experiences than differences. The one exception to this was the discussion of how MS had impacted developmental trajectories and family planning, with about half of the women in the younger age group raising such concerns, while no women in the older age group spoke to this issue during the interviews. Women in both age groups identified substantive barriers to dating at comparable frequencies. Both younger and older age groups also identified developing various coping strategies and negative cognitions related to dating with MS. Interestingly, younger women more frequently identified more cognitions about the uncertainty of their MS negatively impacting dating. Women in both age groups identified that MS had a role in altering their body esteem and sexuality, with women in the older age group noting this concern more frequently. Finally, women in both age groups discussed both negative and positive behavior from dating

partners, with younger women mentioning with greater frequency supportive dating partner reactions.

In the present research, women in the younger, but not older age group explicitly commented on the influence of age-related goals on their experience of dating. In fact, three of the six younger women spoke of how they felt their life experiences seemed significantly different from that of their peers, for example, socializing less than peers, and spending more time on medical-related concerns. These experiences were organized into the theme "MS means a different developmental trajectory." This finding is in line with previous research in the general literature that life goals often vary between these age groups, (Sassler, 2010), and that the diagnosis of MS during younger years may create increased challenges in realizing these plans (World Health Organization, 2008). To date, no research has been located that specifically examined younger versus older women's experiences of dating with MS. Therefore, the current study provides some important information about the experience of younger women living with MS, in that they may feel "off course" in comparison to their peers. Some women expressed a sense of loss over never having an opportunity to form romantic relationships or experience young adulthood, without having MS as a part of their daily reality.

One unexpected theme identified in the analysis was "MS, Family Planning, and Consequences for Dating." Women spontaneously addressed how MS impacted decisions to have a family. Concerns were raised regarding their own thoughts of how MS might affect parenthood. In additions, some spoke of rejection by dating partners, due to concerns about how MS could influence possible family planning. This is the first time such issues have been investigated regarding their influence on the dating experiences of women living MS. These findings are in line with prior research, where women identified apprehensions regarding the

potential impact of their MS on a pregnancy (Smeltzer, 1994). Further, women with MS were more likely to access additional medical consultation regarding pregnancies compared to a sample without MS (Pebdani, Johnson, Amtmann, Bamer, & Wundes, 2015). There is also evidence that being diagnosed earlier in life is associated with having decreased numbers of children (Pebdani, et al., 2015). Interestingly, a psychoeducational intervention was recently shown to lessen many of these concerns in women living with MS considering parenthood (Prunty, Sharpe, Butow, and Fulcher, 2008). Prunty and colleagues (2008) recommended that psychoeducational material be disseminated to women living with MS who are considering parenthood. Given that some of the women in the present study identified concerns regarding navigating decisions about having children, such psychoeducational programs noted would likely be beneficial.

Discussion and Integration of Quantitative and Qualitative Findings

A consistent finding of the present research, with regard to both qualitative and quantitative findings, was participants reported that increased symptoms of MS were associated with more barriers and difficulties to dating. It is well known that MS symptoms are often discernable to others, and therefore likely create increased visibility of MS, in addition to more practical barriers (e.g., Multiple Sclerosis Society, 2010; World Health Organization, 2008). Researchers have found a link among women living with chronic neurological illness and increased dating barriers with greater symptom visibility (Howland and Rintala, 2001; Rintala et. al., 1997). Such concerns were captured by the comment of one woman in the qualitative study, age 31.

> "I lost the use of my left side, and that was devastating for me because I've always been an active person, and all of the sudden I had something that was visibly wrong with me where I looked different than other people."

Regarding views of oneself, lower perceived attractiveness and sexual esteem were both associated with more dating barriers in the quantitative component of the research study. MS is associated with increased difficulties with sexual functioning, bowel and bladder symptoms, and visible symptoms such as muscle spasticity (Foley & Werner, 2004; Miller et al., 1994; Zorzon et al., 1999), and these symptoms have been found to lead to more negative self-esteem (e.g., McCabe et al., 2003; Taleporos & McCabe, 2001; Taleporos & McCabe, 2005). The qualitative component of the study gave space for women to discuss how their self-image was impacted by MS. Here, women spoke to both the effect of MS on their sexual esteem, but also on their perceived attractiveness. As one woman (age 56) noted:

"My gait and my posture is different and uh – I know I'm [in my 50's], but to me I feel

like I have… my demeanor and appearance because of the way I feel and walk is of

someone a lot older than me and therefore it feels less attractive."

Taken together, the present study sheds light on the importance of sexual esteem and

perceived attractiveness. Specifically, worse total sexual esteem and body esteem, as well as

decreased feelings of attractiveness were associated with more negative dating experiences.

Although there has been limited investigation into these factors among those with MS, increased

disability has been shown to be associated with poorer body esteem, sexual esteem, and

perceived attractiveness to others (e.g., McCabe et al., 2003, Taleporos & McCabe, 2001;

Taleporos & McCabe, 2005). Therefore, the present findings are important in that they expand

the current research to an MS sample and examine their specific role in dating using mixed

methodology. Such findings have potential implications for targeting body and sexual esteem or

attractiveness to enhance dating confidence and improve dating experiences for women living

with MS (Lease et al., 2007; Ménard & Offman, 2009).

Regarding the findings from the quantitative component of the study, higher levels of

anxious attachment consistently predicted more negative dating outcomes. Anxious attachment is

characterized by concerns of being abandoned and a more negative self- image (Brennan et al.,

1998) and has been found to be associated with lower likelihood of being in a romantic

relationship and more difficulties in romantic relationships (e.g., Bookwala, 2003; Collins and

Read, 1990; Mohr et al., 2010). The qualitative component of the research did not explicitly

enquire about anxious attachment, however participants did speak about the negative impact of

anxiety on dating. Specifically, they noted being apprehensive about MS negatively impacting

their dating experiences compounded the anxieties about dating. The anxiety of being rejected by a dating partner was clearly illustrated by one woman, age 56:

"I think that part of the barrier for relationships isn't just… it's also an internal thing for those of us who are having problems having a relationship, it's an internal thing with our expectations and our fears of being rejected again. So some of it is guarding myself."

Avoidant attachment, although less strongly correlated with dating outcomes compared to anxious attachment, also significantly predicted worse overall dating experiences. Avoidant attachment is characterized primarily by a hesitancy to be close with others (e.g., Brennan et al, 1998), which has been found to be associated with less positive outcomes in dating and romantic relationships (e.g., Birnie et al., 2009; Mohr et al., 2010). Although not explicitly explored in the qualitative research component, women noted using some avoidance behaviours to circumvent possible negative effects of dating and described seeing a romantic relationship as something that could inherently bring more stress. Another woman, age 31 spoke of the concern she had about being rejected, and how she worried this would negatively impact her health.

"One of the first things that my doctor had said to me when I first was diagnosed was that it's incredibly important to evaluate and be cautious about who you have in your life because emotional stress is one of the biggest triggers for MS relapses. So, what's always been in my mind is, is this relationship going to hinder me in any way. If I get too attached to someone and I get hurt, what's the consequence?"

Regarding age, while in many cases both younger and older age participants expressed challenges with dating, those in the younger age groups at times had increased barriers both in the quantitative and qualitative studies. This may be because being diagnosed with MS at a younger age interferes with one's projected life course (Sassler, 2010). The qualitative analysis

helped to clarify specific concerns regarding family planning for several younger women, as well as the apprehensions regarding stigma, and how to disclose their MS symptoms to dating partners. One woman in the study, age 54, underscored her concerns about disclosure, saying: "I thought about doing one of those online dating things, but I'm afraid, like what do I put down? Do I put down in the description of myself that I have MS? How would I do that?"

While many of the barriers to dating that women encountered were similar across the age groups in the quantitative component, the qualitative component pointed to age differences that were not uncovered in the quantitative component. The qualitative research allowed for women to expand upon dating experiences across the age groups, allowing for a more complete understanding of the dating experiences for women living with MS. Specifically, women in the younger, but not older age group noted concerns about family planning and having experienced a different life trajectory as compared to others their own age without MS. This unique finding underscores the richness that the qualitative component of the study added to the present research, and information about age differences that might have been overlooked had only quantitative surveys been used.

As a whole, the present research shed light on the experience of dating with MS for women. Increased illness symptoms were often associated with more barriers to dating. In addition, women often felt that MS had impacted their perceived attractiveness and sexual esteem. Moreover, women also raised their concerns about disclosing their illness in the context of dating, and of their negative experiences with stigma.

Clinical Implications

The current research points to the importance of increasing supports for single women living with MS. Of note, the qualitative component of the study identified increased barriers, such as difficulties meeting romantic partners due to time spent with medical visits, economic barriers, difficulties with accessibility of activities, transportation, and venues, and concerns regarding disclosure of MS. Further, several women reported experiences of stigma, which worsened their dating experiences. Issues of inaccessibility (such as buildings that are not wheelchair accessible) are a common problem encountered by individuals living with physical challenges such as MS (e.g., Rimmer, Riley, Wang, Rauworth, & Jurkowski, 2004; Vanner et. al. 2008), and one which impacted women in the current study. Previous research has found that women with various types of neurological illness reported such barriers in their environment that were cumbersome to dating (Howland & Rintala, 2001). However, this is the first study showing that women with MS feel such accessibility issues can negatively effect their dating experiences and relationships. This is an important issue to address generally in society, but also specifically in the context of decreasing barriers to dating with MS. Increasing accessibility of venues and activities would likely lead to a positive impact for women who are dating with MS.

Further, women in the younger group within the qualitative study spontaneously voiced increased difficulties with romantic relationships due to their own concerns, and due to reservations of others regarding the possible impact of MS on pregnancy. Concerns of women about pregnancy and MS had been previously reported, but not in the context of dating (Pebdani et al, 2015; Smeltzer, 1994). Psychoeducational interventions have shown efficacy in alleviating worries about elevated risks to one's pregnancy amongst women living with MS (Prunty et al., 2008). As suggested by Prunty and colleagues (2008), it may be helpful to offer psychoeducation

to support groups for single women who are considering parenthood. The present research suggests that psychoeducation about pregnancy and MS may also be especially important for to add to support groups for single women with MS who are dating.

Both the qualitative and quantitative studies found that greater physical symptoms, in addition to psychological and cognitive symptoms were problematic for women regarding dating with MS. These data point toward clinical interventions that provide support and strategies for managing illness symptoms, in addition to treating mood and anxiety symptoms. Based on the present findings, it appears such an intervention could be beneficial for single women living with MS through decreasing barriers to dating. Cognitive behavioural therapy (CBT) interventions are known to be effective in helping individuals adjust to MS (Mohr & Cox, 2001; Mohr et. al., 2005). Further, recent research has found psychological interventions that target illness uncertainty to be efficacious in a group of men in watchful waiting for prostate cancer (Bailey, Mischel, Belvea, Stewart, & Mohler, 2004). These type of interventions could be helpful for those coping with MS as well, who must also endure waxing and waning physical symptoms as well as managing an uncertain future with partners. Such treatments may also be helpful in decreasing physical and emotional barriers to dating among women with MS.

Study participants also identified worries regarding how and when to disclose their MS, and expressed concerns about navigating the online dating community. There has been limited research on the experiences of disclosure among those with MS (Grytten & Maseide, 2005; Grytten & Maseide, 2006), and it has yet to be examined in a dating context. Support in this process of disclosure is critical. Moreover, development of and access to dating sites that are accessible and inclusive for women living with chronic health concerns is also important. Research completed with other groups regarding the illness disclosure process could be applied

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and extended to those with MS. For example, research about the experiences of disclosing genetic risk of developing an illness such as cancer could potentially be extended to the process of disclosure in MS (Klitzman & Sweeney, 2011). This would be an important step in future research examining dating among those with MS as the negative impact of limiting disclosure due to stigma has been linked to negative psychological outcomes (Klitzman & Sweeney, 2011; Quinn and Earnshaw, 2011)

Improving body esteem, sexual esteem, and perceived attractiveness may be important targets for enhancing dating experiences. Women with MS often live with various illness symptoms or MS-related disability that can negatively influence their body and sexual esteem and perceived attractiveness (e.g., Foley & Werner, 2004; Miller et al., 1994; Zorzon et al., 1999). The present research has shown these factors to be associated with worse dating outcomes; future research on programs to target esteem in the context of dating for women with MS would likely be beneficial.

Finally, study participants experienced stigma related to their MS, which created a barrier to dating. Previous research in women with neurological symptoms has also found similar encounters with societal stigma when dating (Howland & Rintala, 2001). Individuals with MS have been found in previous research to encounter increased stigma related to their chronic illness, both due to negative beliefs by others about having an illness, as well as a misinterpretation of MS symptoms (such as mistaking unsteady gate for intoxication) (Grytten & Maseide, 2005; Grytten & Maseide, 2006). Here, public awareness programs and education might assist others in understanding MS, and help to decrease misconceptions that lead to stigmatization among this group of women.

Limitations

While the current project highlighted an important, and often under researched topic for those living with MS, there are several limitations to consider. First, there are a number of research design considerations. The study was cross sectional. Therefore, the direction of the relationships cannot be determined from the study design; for example, negative dating experiences might drive worse sexual esteem and perceived attractiveness to others, and not the other way around. The study also used only self-report data. Had observer data been used there may have been a different impact of MS (such as the impact of disability or attachment style) that was observable on dating behaviours, than women perceived and reported. Longitudinal research would be useful in supporting the proposed directions of findings from the current study. The present study also examined solely women. While this design decision was purposeful in that the rates of MS for women are higher and dating experiences may vary between genders, nevertheless, a limitation of the current study is that it is unable to answer questions about dating experiences for men. The qualitative sample was drawn separately from the quantitative sample, and was recruited after completion of the quantitative study. Completing the qualitative component first may have influenced the quantitative component. For example, it would have allowed for the inclusion of questionnaires about MS-related stigma, which was an important barrier to dating noted by women in the qualitative component. Additionally, concurrent coding of the qualitative data prior to conducting the quantitative component could have allowed for more tailoring of the quantitative questionnaire to reflect themes raised by the women.

The recruitment methods may also limit data interpretation. For both components of the study, the women were recruited through a large organization for individuals living with MS.

This sample likely differed from other research using clinical samples of MS patients (e.g., recruited directly from specialty MS clinics or primary care practices). Specifically, these women may be more engaged in seeking support of their illness, which could be due to taking a more active management approach, due to an increased need for support, or both. Further, these women are already connected with an important source of social support through these organizations. Consequently, women in our sample may differ significantly in terms of feeling supported compared to those not connected with such groups. It is yet unknown whether or to what extent dating experiences differ for women recruited through the MS Society compared to clinical settings. In addition, the sample might also have had better adjustment and less difficulties dating comparted to a sample of women with MS recruited through a general medical clinic, due to their active help seeking behaviours through the MS support groups.

Regarding the quantitative component of the study, while an adequate number of women were recruited for the research based on an *a priori* power calculation, it is possible that a larger research sample may have allowed for increased ability to detect moderation. In addition, the measure of the communication barriers subscale of the Dating Experiences Questionnaire suffered from low reliability in the present sample. ($\alpha = .61$), which may have been a factor in the lack of statistically significant findings. Replication and further investigation in additional studies may help to elucidate potential communication barriers faced by women with MS when dating. Further, in both the quantitative and qualitative components there was no healthy control group. In future research, it may be important to include a control group of women without disability to differentiate the typical dating challenges faced by single women from the unique or increased challenges of women living with MS.

Another limitation is that women were not asked about they were currently actively pursuing dating relationships, and if so, how they were pursuing dating relationships. Therefore, it is unknown if the women were reporting on current dating experiences, or if they were reflecting back on the past. Given this, it is unknown to what extent dissatisfaction with dating represents the here and now, or if it represents a cumulative level of dissatisfaction. This would be important information to gather in future clinical research. Additionally, other dating information was not examined such as satisfaction with current dating, frequency of dating, and whether women were online dating. These could have added depth to the information gathered about the dating experiences of women in the current study.

Further, the sexual orientation of women in the study was not asked; women who identify as lesbian or bisexual may have a different dating experience than women who identify as heterosexual. Examining differences and similarities between heterosexual and non-heterosexual women would be important to explore in future research so that dating interventions can be more widely applied. Additionally, the qualitative component of the study did not collect specific demographic information about the women beyond age and country. In future research more detailed demographic information would be useful in understanding the unique backgrounds of women participating the qualitative research. The manner in which age was grouped in the present study was also a potential limitation of the current research. Specifically, there may be a large amount of diversity in dating experiences in the 20-40 age group. Targeting a younger age group with a smaller age range (e.g. 20-30) might have better captured the experiences of women who had just recently been diagnosed with MS. Further, while both groups identified going online to find dates, there were likely cohort differences regarding access to online dating. For example, the older age group would have experienced dating both with and without online dating

as an available option in their lifetime. Additionally, women in the older age group would had a dramatically narrower list of treatment options since diagnosis, and likely more societal stigma and less understanding about their MS. These cohort differences likely impacted the social experiences of women in the older versus younger age groups.

Another potential limitation of the current study was the manner in which attachment was measured. Specifically, although the ECR-R was used in the present research to gage attachment patterns as is convention within health psychology research, there are additional attachment measures that might have added depth to the understanding of attachment in the current research. In particular, the Adult Attachment Interview (AAI) is a semi-structured 60 minute interview wherein 18 semi-structured questions obtain information about attachment figures (e.g., parents) in that person's life. The interview provides space to elaborate on any difficulties with these attachment figures or significant events, and reactions to these occurrences. These interviews are then transcribed, coded, and analyzed for attachment patterns. While the ECR-R is also a well-known and reliable measure of attachment (Fraley, Waller, & Brennan, 2000; Ravitz, 2010; Sibley & Liu, 2004) the use of the AAI in future studies could lead to increased insight about attachment patterns among women with MS, and how these impact dating behaviours and experiences.

Further, as with many studies, many of the women in the quantitative component were Caucasian and were highly educated. Women who volunteered for a dating study may inherently be more comfortable talking about dating and romantic relationships. In addition, much of the advertising was completed through email list serves or online (although flyers were also posted at MS organizations). This method may have yielded a sample more comfortable with computers and perhaps more highly educated in comparison to the general population of women with MS.

Additionally, there were more women from the U.S. than from Canada, although there were no

significant differences between the groups. It should be noted however, that this difference may

impact the generalizability of the data to other Canadian or U.S. samples.

Future Directions

Based on the present findings, it appears that stigma and accessibility issues faced by women living with MS may be of particular concern. Future research may focus not only on replicating such findings, but also on how best to bolster support for women living with MS who are single and dating. Also, future research could benefit from recruiting a larger sample size to further investigate the relationship between attachment and dating experiences for women living with MS. It may be useful to recruit from general medical clinics, so that it can be investigated whether such findings apply generally to women with MS, rather than only those who might seek out social support through MS organizations. In addition, a recruitment of a healthy control group would be useful in determining the potential difference between those with MS and the general population regarding dating experiences, and the impact of MS symptoms on such factors. The additional study of men's dating experiences while living with MS would also be an important area of study, which to date has not yet been investigated. Further, as noted previously, the additional measure of adult attachment using the AAI would likely add additional important information about attachment and dating among those living with MS.

It is also of note that the present study did not inquire about sexual orientation, and so in planning interventions to support single women with MS seeking romantic relationships, it may also be critical to what similarities or differences for women of various sexual orientations as to create supports and interventions suited to needs of all single women living with MS. Finally, future research should explore the efficacy of interventions for decreasing stigma towards women living with MS, and also for decreasing barriers to dating. It may be useful to explore the utility of preexisting interventions (Mohr & Cox, 2001; Mohr et. al., 2005), along with additional support and interventions regarding the process of disclosure and managing stigma.

Appendix 1

Interview Guide for Single Women with MS

Semi-structured interview

Impact of MS on Dating

Tell me about how MS impacts dating? Could you give me an example?

Did you date before you had MS? What has MS changed most about your dating

experiences?

How do you feel about the amount you are currently dating? Would you like to change

anything? If yes what would you change?

Tell me about your experiences attracting dating partners

Barriers to Dating

Do physical symptoms of MS ever create challenges to dating? Could you tell me which

ones you find most troublesome when dating?

Have you ever told a dating partner that you had MS? What was that experience like?

Do you think it's more difficult to date when you have MS? What do you feel makes it

more difficult to date?

MS and Body and Sexual Esteem

Has MS changed how you view your body? If yes how so? Do you feel the way you see

your body impacts your dating experience?

How do you feel about your sexuality and your ability to express this part of yourself with

a partner? Has this changed at all since your diagnosis of MS? Do you feel the way you

view your sexuality impacts your dating experience?

Note. Part of the current interview was adapted from Rintala et al. 1997 and Taleporos &
McCabe, 2002.

The Experiences in Close Relationships-Revised (ECR-R) Questionnaire
(Fraley, Waller, & Brennan, 2000)

Scoring Information: The first 18 items listed below comprise the attachment-related anxiety scale. Items 19 – 36 comprise the attachment-related avoidance scale. In real research, the order in which these items are presented should be randomized. Each item is rated on a 7-point scale where 1 = strongly disagree and 7 = strongly agree. To obtain a score for attachment-related *anxiety*, please average a person's responses to items 1 – 18. However, because items 9 and 11 are "reverse keyed" (i.e., high numbers represent low anxiety rather than high anxiety), you'll need to reverse the answers to those questions before averaging the responses. (If someone answers with a "6" to item 9, you'll need to re-key it as a 2 before averaging.) To obtain a score for attachment-related *avoidance*, please average a person's responses to items 19 – 36. Items 20, 22, 26, 27, 28, 29, 30, 31, 33, 34, 35, and 36 will need to be reverse keyed before you compute this average.

Generic Instructions: The statements below concern how you feel in emotionally intimate relationships. We are interested in how you *generally* experience relationships, not just in what is happening in a current relationship. Respond to each statement by [web: clicking a circle] [paper: circling a number] to indicate how much you agree or disagree with the statement

Special notes: You may wish to randomize the order of the items when presenting them to research participants. The ordering below is simply a convenient one for illustrating which items belong to which scale. Also, some people have modified the items to refer to "others" rather than "romantic partners." This seems sensible to us, and in our own research we commonly alter the wording to refer to different individuals. For example, sometimes we reword the items to refer to "others" or "this person" and alter the instructions to say something like "The statements below concern how you generally feel in your relationship with your mother" or "The statements below concern how you generally feel in your relationship with your romantic partner (i.e., a girlfriend, boyfriend, or spouse)."

1. I'm afraid that I will lose my partner's love.
2. I often worry that my partner will not want to stay with me.
3. I often worry that my partner doesn't really love me.
4. I worry that romantic partners won't care about me as much as I care about them.
5. I often wish that my partner's feelings for me were as strong as my feelings for him or her.
6. I worry a lot about my relationships.
7. When my partner is out of sight, I worry that he or she might become interested in someone else.
8. When I show my feelings for romantic partners, I'm afraid they will not feel the same about me.
9. I rarely worry about my partner leaving me.
10. My romantic partner makes me doubt myself.
11. I do not often worry about being abandoned.
12. I find that my partner(s) don't want to get as close as I would like.
13. Sometimes romantic partners change their feelings about me for no apparent reason.

14. My desire to be very close sometimes scares people away.
15. I'm afraid that once a romantic partner gets to know me, he or she won't like who I really am.
16. It makes me mad that I don't get the affection and support I need from my partner.
17. I worry that I won't measure up to other people.
18. My partner only seems to notice me when I'm angry.
19. I prefer not to show a partner how I feel deep down.
20. I feel comfortable sharing my private thoughts and feelings with my partner.
21. I find it difficult to allow myself to depend on romantic partners.
22. I am very comfortable being close to romantic partners.
23. I don't feel comfortable opening up to romantic partners.
24. I prefer not to be too close to romantic partners.
25. I get uncomfortable when a romantic partner wants to be very close.
26. I find it relatively easy to get close to my partner.
27. It's not difficult for me to get close to my partner.
28. I usually discuss my problems and concerns with my partner.
29. It helps to turn to my romantic partner in times of need.
30. I tell my partner just about everything.
31. I talk things over with my partner.
32. I am nervous when partners get too close to me.
33. I feel comfortable depending on romantic partners.
34. I find it easy to depend on romantic partners.
35. It's easy for me to be affectionate with my partner.
36. My partner really understands me and my needs.

The Dating Experiences Questionnaire
(Rintala et al., 2007)

My appearance makes it difficult for me to attract someone to date.

1	2	3	4	5	6	7
very untrue						very true

It is easier for other women to get dates than it is for me.

1	2	3	4	5	6	7
very untrue						very true

People rarely approach me for a date; I usually have to ask them out first.

1	2	3	4	5	6	7
very untrue						very true

I date as often as I would like.

1	2	3	4	5	6	7
very untrue						very true

People I would like to date see me as a friend, not as a romantic partner.

1	2	3	4	5	6	7
very untrue						very true

Someone who is interested in me might not ask me out because of what others might say.

1	2	3	4	5	6	7
very untrue						very true

Physical barriers in my environment limit my ability to socialize.

1	2	3	4	5	6	7
very untrue						very true

Many people do not ask me out because they assume I am unable to have sexual intercourse.

1	2	3	4	5	6	7
very untrue						very true

People seem surprised that I might be interested in sexual intimacy.

1	2	3	4	5	6	7
very untrue						very true

I believe that my dating relationships would last longer if I could communicate better.

1	2	3	4	5	6	7
very untrue						very true

I communicate well with my friends. I never learned how to express my interest to potential dating partners.

1	2	3	4	5	6	7

very untrue   very true

I feel too self-conscious to approach someone for a date.
1   2   3   4   5   6   7
 very untrue   very true

Family members pressure me not to date.
1   2   3   4   5   6   7
 very untrue   very true

I rarely get out of the house to meet people.
1   2   3   4   5   6   7
 very untrue   very true

Lack of reliable transportation limits my ability to socialize.
1   2   3   4   5   6   7
 very untrue   very true

The Physical Disability Sexual and Body Esteem (PDSBE) Scale
(Taleporos & McCabe, 2002)

Please indicate your response to the following statements by circling the appropriate number corresponding to the degree to which you agree or disagree with each statement. Your responses should reflect your personal opinions and feelings about your disability, your body and your sexuality.

	Strongly agree	Agree	Don't know	Disagree	Strongly disagree
1. I feel that my disability interferes with my sexual enjoyment.	1	2	3	4	5
2. It is harder to find a sexual partner when you have a disability.	1	2	3	4	5
3. I would like to hide my disability as much as possible.	1	2	3	4	5
4. I feel sexually frustrated because of my disability.	1	2	3	4	5
5. I feel that my disability is likely to prevent me from satisfying a sexual partner.	1	2	3	4	5
6. My sexual expression is limited by my disability.	1	2	3	4	5
7. I feel that people are not sexually interested in me because of my disability.	1	2	3	4	5
8. I envy people with 'normal' bodies.	1	2	3	4	5
9. I believe that I experience rejection from potential sexual partners because of my disability.	1	2	3	4	5
10. I would do a body swap with an able-bodied person if I could.	1	2	3	4	5

CES-D Scales

Please indicate the extent to which you have experienced each item
over the LAST SEVEN DAYS. Circle the number that best
 corresponds to your experience.

During the past week:	Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasion-ally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)
1. I was bothered by things that usually don't bother me.	0	1	2	3
2. I did not feel like eating; my appetite was poor.	0	1	2	3
3. I felt that I could not shake off the blues even with help from my family or friends.	0	1	2	3
4. I felt that I was just as good as other people.	0	1	2	3
5. I had trouble keeping my mind on what I was doing.	0	1	2	3
6. I felt depressed.	0	1	2	3
7. I felt that everything I did was an effort.	0	1	2	3
8. I felt hopeful about the future.	0	1	2	3
9. I thought my life had been a failure.	0	1	2	3
10. I felt fearful.	0	1	2	3
11. My sleep was restless.	0	1	2	3
12. I was happy.	0	1	2	3
13. I talked less than usual.	0	1	2	3
14. I felt lonely.	0	1	2	3
15. People were unfriendly	0	1	2	3
16. I enjoyed life.	0	1	2	3
17. I had crying spells.	0	1	2	3
18. I felt sad.	0	1	2	3
19. I felt that people disliked me.	0	1	2	3
20. I could not get going.	0	1	2	3

The Guy's Neurological Disability Scale

To the person with the disease (multiple sclerosis)

This questionnaire refers to you. Most of the questions can be answered directly by you, and ask your opinion. However some questions specifically ask for the opinion of another person. And sometimes you may have difficulty in knowing the answer.

Therefore it is important that a friend, relative or carer also helps if at all possible. This is especially important because sometimes it may be difficult to read the questions or to indicate the answers.

The questions cover twelve areas of your life:

- Memory and concentration;
- Mood and emotions;
- Vision;
- Speech and communication;
- Swallowing;
- Use of the arms and hands;
- Mobility;
- Bladder function;
- Bowel function;
- Fatigue;
- Sexual function (this is optional);
- Any other problem area you may have.

The questions are in boxes. For each question please tick (or ask your helper to tick) the **'yes'** or **'no'** box. Sometimes you may be able to move on to the next section.

Please feel free to write comments after each box.

To the person who helps

Please read the questions to the patient, and use your judgement as necessary.

Name of patient: _____

Name of other person: _____

Date filled in: _____

Memory and concentration

Q	Question	Yes	No
1	Do you have any problems with your memory or your ability to concentrate and work things out?		
2	**If 'No' to Q 1:** Do your family or friends think you have such a problem?		
	If answer to either of the questions (1 or 2) is 'Yes':		
3	Do you need to use lists or other aids to help you overcome this problem?		
4	Do you need help from other people to plan your daily affairs or to work out simple finances?		

To the helper or other person:
Is the person fully orientated in time, place and person?   Yes, fully
Yes, partially
No, totally disorientated

Any comments?

Mood

Q	Question	Yes	No
1	Have you been feeling anxious, irritable, depressed, or had any mood swings during the last month? (*If 'yes', please write your problem below*)		
	To other person:		
2	Does the person have euphoria (being over happy) or emotional lability (crying or laughing too easily)?		
	If answer to either question (1 or 2) is yes:		
3	Have you / has the person had this problem most days?		
4	Has this problem affected your ability to do **any** of your usual activities?		
	If 'yes' to Q 4:		
5	Has this problem been severe enough to prevent you from doing **all** your usual activities?		
6	Have you been admitted to hospital for treatment of your mood problem during the last month?		

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Vision

Q	Question	Yes	No
1	Do you have any problems with your vision?		
	If 'Yes' to Q 1:		
2	Can you read normal newspaper print (with ordinary glasses if worn, but not magnifying lenses)?		
	If 'No' to Q 2:		
3	Can you read large newspaper print?		
4	Can you count your fingers if you hold your hand out in front of you?		
5	Can you see your hand move in front of you?		

Any comments?

Speech and communication

Q	Question	Yes	No
1	Do you have any problems with your speech?		
	To other person:		
2	Do you think the person has any problem with their speech?		
	If answer to either of the questions (1 or 2) is 'Yes':		
3	Do you have this problem most days?		
4	Do you have this problem all the time and in every sentence?		
5	Do you need to write things down, use sign language, or use a communication aid?		
	To other person:		
6	Is the patient able to communicate effectively?		

Any comments?

Swallowing

Q	Question	Yes	No
1	Do you have to take care when swallowing solids or fluids?		
	If 'yes' to Q 1:		
2	Do you have to take care with most meals?		
3	Do you choke during most meals?		
4	Does your food require special preparation (e.g. mashing) to modify its consistency?		
5	Do you have a feeding tube (nasogastric tube or gastrostomy tube)?		

Any comments:

Arms and hands

Q	Question	Yes	No
1	Do you have any problems with your arms or hands?		
	If 'yes' to Q1: please describe your problem below.		
2	Do you have any difficulty in doing **any** of your zips or buttons?		
2a	**If 'yes' to Q2:** are you able to do **all** of your zips and buttons?		
3	Do you have any difficulty in washing **or** brushing your hair?		
3a	**If 'yes' to Q3:** are you able to wash **and** brush your hair?		
4	Do you have any difficulty in using a knife and fork **together**?		
4a	**If 'yes' to Q4:** are you able to use a knife and fork together?		
5	Do you have any difficulty in handling **small** coins?		
5a	**If 'yes' to Q5:** Are you able to handle **small** coins?		
6	**If unable to use hands for any of above activities:** Can you use your hands for anything at all?		

What problem(s) do you have with your arms and hands?

Mobility

Q	Question	Yes	No
1	Do you have any problems with your walking?		
1a	**To the other person:** Does the person have any problems with their walking?		
	If 'yes' to Q1 or Q1a:		
2	Do you use a walking aid:		
3	How do you usually get around outdoors:		
3a	Without aid		
3b	**Or** With one stick or crutch, or holding someone's arm?		
3c	**Or** With two sticks or crutches, a walking frame, **or** one stick or crutch **and** someone's arm?		
3d	**Or** With a wheelchair		
4	Can you stand and walk a few steps with help?		

Any comments?

Bladder

Q	Question	Yes	No
1	Do you have any problems with your bladder?		
2	Are you currently on any treatment for such problems?		
3	Do you have to rush to the toilet, go frequently, or have difficulty in starting to pass urine?		
4	Have you been incontinent in the last month?		
5	Have you been incontinent every week?		
6	Have you been incontinent every day?		
7	Do you use a catheter (tube) to empty your bladder?		
8	Do you have a permanent catheter (tube) in the bladder, or, if a man, do you use a sheath to catch your urine?		

Any comments?

Bowels

Q	Question	Yes	No
1	Do you have any problems with your bowel movements?		
	If the answer to Q1 was 'yes'		
1a	Do you suffer from constipation?		
2	Are you on any treatment for your bowels?		
3	Do you take laxatives or use suppositories for constipation?		
4	Do you need to use enemas for constipation?		
5	Do you need to evacuate your bowels by hand?		
6	Do you have to rush to the toilet to open your bowels?		
7	Have your had any bowel accidents (been incontinent of faeces) in the last month?		
8	Have you had bowel accidents every week?		

Any comments?

Fatigue

Q	Question	Yes	No
1	Have you been feeling tired or getting tired easily during the last month?		
	If 'yes':		
2	Have you been feeling tired or getting tired easily most days?		
3	Has this tiredness affected your ability to do **any** of your usual activities		
4	Has the tiredness been severe enough to prevent you from doing **all** your usual activities.		
5	Has the tiredness been severe enough to confine you to bed and prevent you from doing **all** physical and mental activities.		

Any comments?

Sexual activities

The next set of questions relate to sexual function. Do you mind being asked about this? If so, please leave blank.

Q	Question	Yes	No
1	Do you have any problems in relation to your sexual function?		
	If 'yes':		
2	Do you have any problems in finding or satisfying a sexual partner?		
3	Is your sexual drive (desire) reduced?		
4	Is your sexual function affected by any physical problem such as loss of sensation, pain, weakness, spasms, catheterisation or incontinence?		
5	Do you have any difficulty with: (*men*): erection or ejaculation? (*women*) vaginal lubrication or orgasm?		
6	Do any of these difficulties totally prevent any sexual activities?		

Any comments?

Other disabilities

Do you have any other problems due to multiple sclerosis (MS) which have not been mentioned so far (such as: pain, spasms, dizziness)?

If 'yes', please answer below:

What is the worst other problem:

Q	Question	Yes	No
1	Have you had this problem most days during the last month?		
2	Has this problem affected your ability to do **any** of your usual activities?		
3	Has this problem been severe enough to prevent you from doing **all** your usual activities, or to make you stay in bed all the time?		
4	Have you been admitted to hospital for this problem in the last year?		

Thank you for all your help. If you want to add anything else please do so here.

Study Scoring

The Experience in Close Relationships-Revised Questionnaire (ECR-R). Items 1-18 items comprise the attachment-related anxiety scale, items 19-36 comprise the attachment-related avoidance scale.

Physical Disability Sexual and Body Esteem Scale (PDSBE). Sexual Esteem (1, 4, 5, 6), Attractiveness to Others (2, 7, 9), and Body Esteem (8 and 10). (Scale item 3 was removed for reliability in the current sample).

The Dating Experiences Questionnaire (DEQ). Dating Constraints (item 1, 2, 3, and 5), Societal Barriers to Dating (6, 8, and 9), and Communication Barriers to Dating (10, 12, and 13). (Scale items 7 and 11 were removed for reliability in the current sample).

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