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Spinal cord injury peer mentorship: Applying self-determination theory to explain quality of life and participation outcomes

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Abstract

Objective: Investigate the role of spinal cord injury (SCI) peer mentorship on quality of life/ participation and test a self-determination theory model that explains the role of SCI peer mentorship on these outcomes. Mentees (i.e., individuals receiving peer mentorship) were hypothesized to report greater quality of life (QoL) and participation compared to non-mentees. Psychological needs were expected to mediate the peer mentorship – outcome relationships.

Design: A static group comparison design.

Setting: Community.

Participants: A convenience sample of mentees(n= 68) and non-mentees(n= 63) who had a SCI, above the age of 18, and spoke either English or French.

Interventions: Mentees: at least 4 peer mentorship sessions over the past 5 years; non-peer mentees: 0 or 1 brief introductory session.

Main Outcome Measure(s): QoL (i.e., life satisfaction and positive and negative affect), participation (e.g., autonomous indoor; family role) and the psychological needs of autonomy, competence and relatedness.

Results: No group differences were found but years since injury was a moderator indicating that, generally, peer mentees living with SCI for longer(~30 years) appear to benefit more from peer mentorship interactions, compared to non-mentees and mentees living with SCI for ~6 years. Competence and relatedness mediated the peer mentorship – outcome relationship for QoL and some participation variables, indicating that peer mentorship predicted competence and relatedness, which in turn were related to the outcomes.

Conclusion(s): Satisfaction of competence and relatedness needs requires greater attention in SCI peer mentorship. Years since injury modified the relationship between peer mentorship and outcomes, which provided new insights on the role of SCI peer mentorship. Further studies are needed to determine SCI peer mentorship-specific outcomes that are important across the years since injury spectrum.

Key words: mentorship; quality of life; spinal cord injury; disability; psychological theory; participation

Abbreviations

SCI = spinal cord injury

QoL = quality of life

SDT = self-determination theory

ANCOVA = Analysis of covariance

bCI = bias corrected confidence intervals

YSI = years since injury

Spinal Cord Injury (SCI) peer mentors are individuals who, through their lived SCI experiences, can provide good emotional support and an empathetic understanding to help others through similar experiences.[1; 2] SCI peer mentorship has received growing attention as an intervention method to enhance quality of life (QoL) and participation (i.e., personal and social activities/behaviours at home and/or in the community) variables among adults with SCI.[3; 4] For instance, Sherman et al.[3] conducted an examination of an existing US-based SCI peer mentorship program in a retrospective survey of 62 adults with SCI who received SCI peer mentorship (mentees; n = 33) or did not (non-mentees). Although the mentoring ended at least a decade earlier, mentees reported greater life satisfaction and were more involved in occupational/recreational activities (participation) than non-mentees. Similarly, a recent study of over 1500 community-dwelling adults with SCI for an average of 18.5 years demonstrated that the extent to which an individual's need for peer support was met predicted life satisfaction and participation.[4] In addition, an emerging body of literature has shown the effectiveness of SCI peer mentorship when such programs target specific behaviours such as wheelchair training skills[5] and strength-training exercise[6]. Across these peer mentorship studies, mediating variables (i.e., variables that describe a path between two or more variables) explaining the positive role of peer mentorship on specific outcomes were not examined. Therefore, the pathways explaining the relationship between SCI peer mentorship and outcomes such as QoL and participation are still largely unknown, especially in existing community-based peer mentorship programs.

Self-determination theory (SDT) can provide insight into these mediating variables. SDT is a psychological theory that acknowledges that satisfaction of three psychological needs is necessary for growth/well-being.[7] The three needs are autonomy (i.e., volition in your actions), competence (i.e., belief in your actions), and relatedness (i.e., sense of belongingness). In SDT,

the social environment plays an important role in the satisfaction of the psychological needs as has been shown across multiple life domains (e.g., family, work, leisure activities),[8] and among adults with a physical disability.[9; 10] Given SCI peer mentors are the main agents of the social environment in a mentor-mentee relationship, SDT is an ideal framework to investigate how mentorship may relate to QoL and participation variables. Indeed, in SCI-based qualitative studies, mentees have described peer mentors as having a role in influencing feelings analogous to competence and relatedness.[11; 12] However, these studies did not examine the mediating role of the psychological needs on the peer mentorship – QoL/participation relationships. Such insights could further our understanding of why peer mentorship is related to greater QoL/participation and inform peer-mentorship programs of the psychological components that mentors could address.

The overall purpose of this study was to examine differences among mentees and non-mentees on QoL/participation and to test a SDT model where the psychological needs mediate this relationship. First, it was hypothesized that mentees would report greater QoL and participation compared to non-mentees.[4] In line with SDT[7], the second hypothesis was that the psychological needs would mediate the peer mentorship –QoL/participation relationships.

Method

Participants and procedures

A static group comparison study was conducted because we are comparing two groups on cross-sectional outcomes[13]. Anticipating a moderate-to-large difference (Cohen's d = .60) in life satisfaction between mentees and non-mentees [3], a power of .80 and an alpha of .05, a sample size of at least 45 adults with SCI per mentee/non-mentee group (N=90) was required to address

hypothesis 1. To test hypothesis 2, a minimum of 100 participants were recruited to reach the recommended 10-20 participants per parameter in the SDT model (10 parameters).[14]

The Quebec provincial organization that represents people with SCI assisted with recruitment. Mentees were individuals who participated in the organization's peer mentorship program, which is an individualized, non-structured, program aimed to enhance the independence/autonomy and QoL of adults with SCI. To minimize participant recall bias regarding their involvement in the program, two groups were created based on the organization's peer mentorship records: (a) adults with SCI who received at least four peer mentorship interactions in the past five years (mentees)[i] and (b) individuals who received zero or only one short introductory interaction with a peer mentor (non-mentees). Contact lists were generated for each group and the research team recruited community-dwelling adults with SCI by email and telephone between January and September 2015. All eligible participants were at least 18 years old, spoke and/or read French or English, and had a SCI for at least one year and completed the measures listed below on an online survey. Informed consent was provided and the study was approved by the first author's research ethics board. Participants were offered a $25 gift card.

Measures

Demographic and SCI information. Participants provided demographic and SCI-related information including: age, gender, marital status, education, level of injury, severity of injury, years since injury, use of adapted public transportation and ownership of an adapted vehicle.

QoL. Three QoL variables were assessed: life satisfaction, positive and negative affect. Using the *Life Satisfaction*-11 questionnaire,[15] participants rated their satisfaction with 11 life situations (e.g., vocational, leisure) on a 6-point scale (1= Very dissatisfying to 6=Very satisfying). A mean of the 11 items was calculated. This scale had good reliability in this study

(Cronbach's α= 0.87). The *Positive and Negative Affect* Schedule[16] was used to assess how participants generally felt by rating a list of 20 adjectives, on a 5-point scale (1= Very slightly/not at all to 5= Extremely). Means were calculated for the 10 positive (e.g., interested; α= 90) and 10 negative affect (e.g., distressed; α= .87) adjectives. See supplemental Table I for confirmatory factor analysis (CFA) supporting the psychometric properties of this scale.

Participation. Using the Patient-Perceived Participation in Daily Activities Questionnaire,[17] participants indicated the extent to which they engaged in 26 activities by selecting one of four option: Yes, as much as I want; Yes, but less than I want; No, but I would like to; and No, but I don't want to. ''No'' answers were grouped and labeled as ''0'' and the "Yes" options were coded as 2 and 1, respectively, to put more weight on participation rather than non-participation[4]. Six subscale scores were summed: autonomous indoors participation (7 items: e.g., performing bladder care; α= .86); autonomous outdoors participation (6 items: e.g., carrying out productive activities that are unpaid; α= 0.78); family roles (4 items: e.g. carrying-out family responsibilities; α= 0.67); health (2 items: e.g. maintaining your physical health; r= 0.23); social relationships (4 items: e.g. maintaining relationships with others; α= 0.60); work-education (3 items: e.g. participating in activities that prepare you to start working in a paid job; α= 0.67). Construct validity was previously demonstrated[17] and these reliability estimates mimic those of another study[4].

Psychological needs. The Balanced measure of psychological needs scale was used to assess the three psychological needs of autonomy, competence and relatedness.[18] Participants responded on a 5-point scale (1= completely disagree, 5= completely agree). Means of the three items for each psychological need were calculated (autonomy(α=.71), competence (α=.90) and relatedness (α=.85)). See supplemental Table II for CFA.

Data analysis

The data were screened for outliers ($Z \geq 3.29$), the normality of the variables (skewness/kurtosis $\geq \pm 2$) and the degree of missingness. Any univariate outliers were reduced to one unit higher than the next acceptable value.[19] Non-normally distributed variables were subjected to a square root transformation. Through a correlation matrix, potential covariates were identified and controlled for in the respective analyses.

Analyses of covariance (ANCOVA) were conducted to examine if mentees reported greater QoL and participation(hypothesis 1) compared to non-mentees when controlling for covariates. "In SPSS v.23, we used the PROCESS macro(model 5) developed by Hayes[20] to conduct mediation and moderation analyses, where the psychological needs were mediators of the peer mentorship–QoL/participation relationships(hypothesis 2) while YSI retained its moderation role." This macro provided 1000 bootstrap 95% bias-corrected confidence intervals (bCI; corrects bias between bootstrap distribution and sample) to indicate significance. Bootstrapping is a superior method to test mediation because bCIs are more accurate than regularly estimated CI and reduce Type 1 error.[21] Significance is determined when the 95% bCI does not cross 0, which is equivalent to $p < .05$.

Results

Preliminary results. A total of 131 adults with SCI were recruited: 68 mentees; 63 non-mentees (see supplemental online Figure A for flow chart). Missing data ranged from 0% to 4% (n=5) on all continuous variables, except for four participation variables (outdoors, health, work-education, and social relationship) which ranged from 26%(n=34) to 27%(n=35). Missing data were due to an online survey error where only part of the questionnaire was displayed for the first 33 participants. After fixing the error, missing data reduced to 0.8% to 3%. Missing data were imputed in the dataset using expectation maximization at 50 iterations and found to be

missing at least at random (Little's MCAR: $\chi^2(160)= 175.61$, $p= .19$). Such an approach was used because the majority of our missing data was below 5% (except for four variables), Little's MCAR test demonstrated that the variables were missing at least at random and to retain power given the clinical population. Variables were normally distributed (skewness range: -1.30 to 1.10; kurtosis range: -0.92 to 0.95), except for social relationship participation (skewness: -1.29; kurtosis: 2.18). A square root transformation reduced skewness (0.58) and kurtosis values (-0.03), but the original data for this participation variable were used because the results were the same for the transformed and non-transformed variable.[ii] Because years since injury (YSI) differed between groups (Table 1), it could not be included as a covariate.[22] Covariates reduce unexplained variance and allow for a more accurate test of the independent variable. When a covariate differs as a function of the independent variable, it compromises the interpretation of an ANCOVA.[22] Instead, a moderation analysis can be conducted to examine if the variable modifies the independent-dependent variable relationship. For these reasons, hypothesis 1 was tested twice: (a) without YSI and (b) with YSI as a moderator. Moderation was found when the coefficients of the interaction variable (i.e., SCI peer mentorship*YSI) were significant. Change in R^2 indicated the effect size: .02, .13, .26 for small, medium and large, respectively.[23]

Hypothesis 1a: QoL. All ANCOVAs controlled for sex, paraplegia/tetraplegia, and use of adapted public transportation. No group differences and very small effect sizes were found for *life satisfaction*, *positive affect*, and *negative affect* (See Table 2 and supplemental Table III-V). The interaction between YSI and SCI peer mentorship on life satisfaction was significant with a small to moderate effect size, indicating moderation (Table 3). To interpret moderation, YSI was graphed as low, medium and high YSI, representing 1 standard deviation below (~6 YSI), equal to (~18 YSI), and 1 standard deviation above (~30 YSI) the mean, respectively. As illustrated in

Figure 1, mentees living with SCI for ~30 years reported slightly greater life satisfaction than non-mentees while both groups had similar ratings of life satisfaction at low YSI. No moderation of YSI was found for positive and negative affect.

Hypothesis 1b: Participation. Specific covariates were controlled for when analyzing each participation variable. Mentees and non-mentees did not differ on participation variables (Table 2 & supplemental Tables VI-XI). A significant interaction was found between SCI peer mentorship and YSI on four participation variables with small and small to moderate effect sizes: autonomous indoor participation, social relationship, family role, and health (Table 3). The moderation indicated that autonomous indoor participation was maintained for mentees at different YSI; however, non-mentees with greater YSI indicated lower levels of autonomous indoor participation (Figure 2, panel A). In Figure 2 (panels B to D), mentees living with SCI for ~30 years typically reported greater participation than non-mentees and mentees with lower YSI. At lower YSI, non-mentees typically reported greater participation than mentees.

Hypothesis 2: SDT Model. When included in a single model, the psychological needs exhibited suppression effects on themselves to predict the outcomes. A suppression effect occurs when the relationship between two variables changes direction (e.g., positive to negative) when comparing the bivariate correlation with the coefficient of a multivariate regression. For example, the relationships changed between autonomy and autonomous indoor participation (r= .17; B= -.01) and between relatedness and family role participation (r= .11; B= -.23). Conducting separate models for each psychological need resolved the statistical artifacts caused by suppression effects because the psychological needs were no longer interacting with each other.

After controlling for sex, paraplegia/tetraplegia and use of adapted public transportation, competence and relatedness mediated the relationship between peer mentorship and life

satisfaction, positive affect and negative affect (Table 4; Figure 3; Supplemental Tables XII-XIV). Specifically, mentees reported slightly greater competence (M_{ajd}= 3.71) and relatedness (M_{ajd}= 3.86) than non-mentees (M_{ajd}= 3.26; M_{ajd}= 3.45, respectively). The three psychological needs predicted all QoL variables.

After controlling for sex, paraplegia/tetraplegia, adapted public transportation and mobility, competence mediated the peer mentorship–participation relationship for autonomous indoor participation, family role, and autonomous outdoor participation and relatedness was a mediator for social participation (Table 4; Figures 4 & 5; Supplemental Tables XV-XX). No other mediation was found. Finally, a brief overview of our sensitivity analysis can be found in the online supplemental information.

Discussion

This study examined the relationships between SCI peer mentorship and QoL/participation variables and tested an SDT model with the psychological needs as mediators of that relationship. Overall, mentees living with SCI for ~30 years appeared to benefit more from peer mentorship interactions in comparison with non-mentees and mentees living with SCI for six years or less. However, at lower YSI, non-mentees also reported greater participation than mentees. The SDT model showed that psychological needs of competence and relatedness were significant mediators, partly explaining the role of peer mentorship on QoL/participation.

For hypothesis 1, our findings were unexpected and contrary to previous SCI peer mentorship studies[3; 4; 11] as QoL and participation variables did not differ between the mentees and non-mentees. However, differences existed at specific times in the YSI spectrum, as shown by the small to medium moderation effects, indicating that mentees with greater YSI reported higher life satisfaction and greater participation than non-mentees. Therefore, the effects of peer mentorship on QoL may be more meaningful to individuals who have been living with SCI for

longer. While there are not yet published data to support this statement, anecdotal reports from SCI peer mentorship program leaders suggested that some information shared during peer mentorship (e.g., parenting with an SCI, reducing social isolation) does not become relevant until later on. Therefore, adults living with SCI longer may make the most use of peer mentorship, and thus report slightly greater life satisfaction than mentees with fewer YSI and non-mentees living with SCI longer. Practically, these results inform SCI community-based organizations utilizing peer mentorship, who could consider (a) targeting individuals who may not have utilized peer mentorship early in their injury recovery as they may benefit from mentorship later, and (b) following-up with previous mentees, especially after many YSI, as they may be more receptive to mentorship and experience additional benefits.

We also found that, contrary to expectations, non-mentees with low YSI reported greater participation than mentees. This finding may reflect a self-selection bias such that non-mentees did not seek peer mentorship because they were satisfied with their participation while their mentee counterparts sought mentorship because their participation was not optimal. Furthermore, QoL/participation variables may be too broad and distal outcomes for this existing community-based peer mentorship program because other SCI-related variables may also predict QoL/participation (e.g., secondary complications[24]). Evidently, more research is needed to explain these findings. Qualitative research could explore why people do/do not participate in SCI peer mentorship; measurement studies could identify variables that best capture the benefits of existing SCI peer mentorship programs. Future studies could also code the participation variables differently by separating the “No, but I would like to” and “No, but I don’t want to” response options. As such, different results may emerge, as more weight would be given to motivated, but non-participating individuals.

In hypothesis 2, SDT was partly supported as competence and relatedness mediated some peer mentorship-QoL/participation relationships. SDT studies in other contexts have demonstrated the mediating role of competence and relatedness with regard to similar QoL outcomes, such as positive and negative affect.[25; 26] In addition, the relationship of SCI peer mentorship with competence is similar to findings in other SCI peer mentorship-related studies on self-efficacy, a concept analogous to competence.[5; 27] Other peer mentorship studies have also discussed the importance of relatedness.[11] These findings therefore highlight that if mentors can enhance the psychological needs of competence and relatedness among their mentees, the mentees will likely report greater QoL and specific types of participation. On a practical level, mentors should continue (or start) providing positive feedback, demonstrating new skills, and structuring their mentorship sessions (e.g., outlining goals and expectations of the sessions) to enhance competence. Additionally, mentors could continue (or start) involving family in the mentorship process or introduce mentees to other people with SCI to continue fostering a sense of belongingness among the people they care about.

Limitations and future directions

A limitation of this study is the design. Although a randomized controlled trial would be ideal, it is difficult to implement in community-based settings with existing programing. Making an existing service unavailable for some members would be unethical and not supported by the community organization. Therefore, a static group comparison design remains the most feasible approach to examine outcomes of an existing community-based SCI peer mentorship program, acknowledging that we cannot make causal conclusions. To further understand the effectiveness of peer mentorship, additional studies testing different methods of delivery (e.g., telephone-based SCI peer mentorship[28]), using other designs (e.g., prospective/longitudinal[27]), examining peer mentorship training methods,[29] and testing other mediating variables such as types of social

support (e.g., instrumental, informational, emotional) are needed. Other limitations included separately testing the SDT models for each psychological need due to the suppression effects and imputing the data for four participation variables, warranting caution in the interpretation of these results. Given our items for physical and psychological health participation were broad (1 item each) and had low reliability, other studies examining more detailed measures of these constructs may yield different results. Generalizability is also limited as all participants were recruited from one province in Canada and most responded to an email invitation. Furthermore, mentees were defined as individuals who received at least four peer mentorship sessions in the past five years, which may diverge from other programs' definition of peer mentorship. Future studies could look at the dose-response relationship for mentorship to determine the ideal number of sessions that lead to improvements in QoL/participation. A self-selection bias in our sample may be present as individuals who chose to receive peer mentorship may have unique characteristics (e.g., less SCI-related need met and higher educated).[4] However, such bias does reflect the realities of existing SCI community-based peer mentorship programs.

Conclusion

This study was the first to examine SCI peer mentorship through an SDT lens. It also is the largest study to date to compare SCI mentees and non-mentees in existing community-based peer mentorship programs. This study provided some preliminary insight regarding the roles of YSI and competence and relatedness need satisfaction in relation to key outcomes. However, more effort is needed to understand how SCI peer mentorship programs foster positive outcomes and how these processes can be optimized. Such research could provide exciting opportunities for community-based organizations and researchers to work together to enhance the impact of peer mentorship on the lives of adults with SCI.

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Figure legend

Figure 1. Moderation of years since injury on life satisfaction.

Figure 2. Moderation of years since injury on participation variables.

Panel A. Moderation on autonomous indoor participation

Panel B. Moderation on social relationships participation

Panel C. Moderation on family role participation

Panel D. Moderation on health participation

Note. Across all panels: Low = ~6 years since injury (YSI); medium = ~18 YSI; and High = ~30 YSI.

Figure 3. Self-determination theory model predicting QoL variables

Note. Separate analyses were conducted for each psychological need due to suppression effects. Unstandardized coefficients are presented. Values in parentheses align with the outcome in the same parenthesis. * $p < .05$. ^{a} = autonomy, ^{c} = competence, ^{r} = relatedness values for separate analyses.

Figure 4. Figure 4. Self-determination theory model predicting autonomous participation variables.

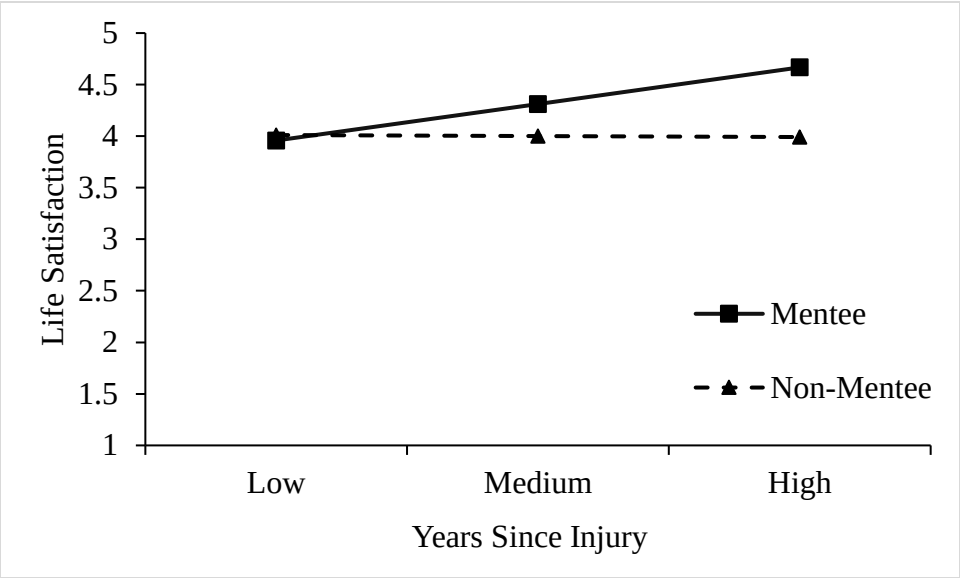
Note. Separate analyses were conducted for each psychological need due to suppression effects. Unstandardized coefficients are presented. Values in parentheses align with the outcome in the same parenthesis. * $p < .05$; † $p = .05$. ^{a} = autonomy, ^{c} = competence, ^{r} = relatedness values for separate analyses.

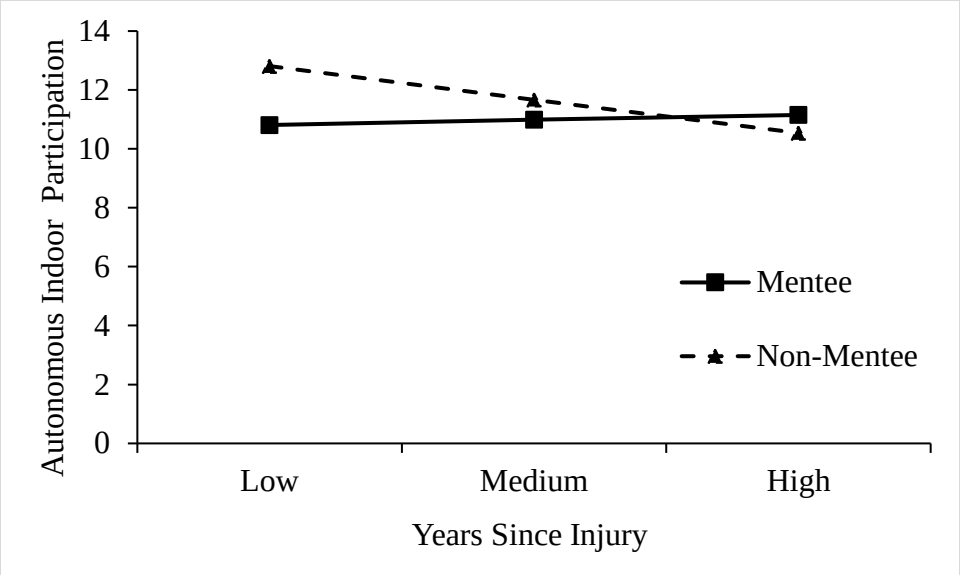
Figure 5. Self-determination theory model predicting social relationship and family role participation variables.

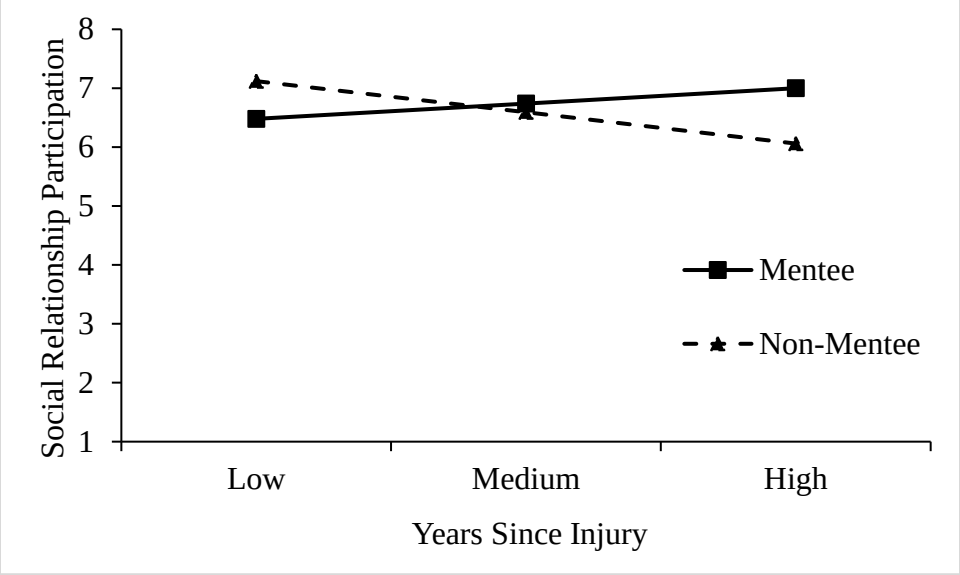
Note. Separate analyses were conducted for each psychological need due to suppression effects. Unstandardized coefficients are presented. Values in parentheses align with the outcome in the same parenthesis. * $p < .05$. ^{a} = autonomy, ^{c} = competence, ^{r} = relatedness values for separate analyses.

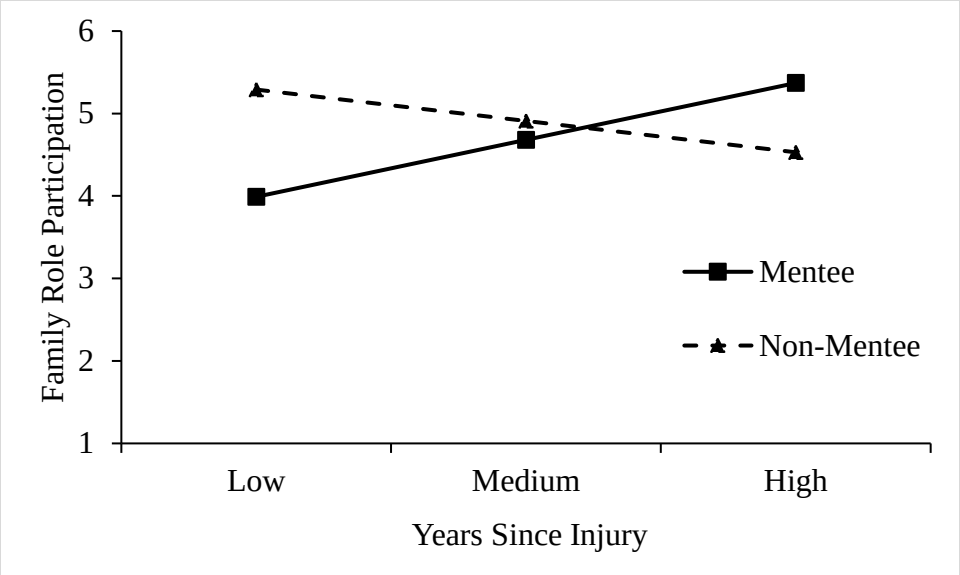
[i] Peer mentors and the directors of the organization indicated that meaningful discussions and mentorship about the life of the mentees typically started on the fourth interaction and onwards. The first and second interactions are typically short, introductory discussions.

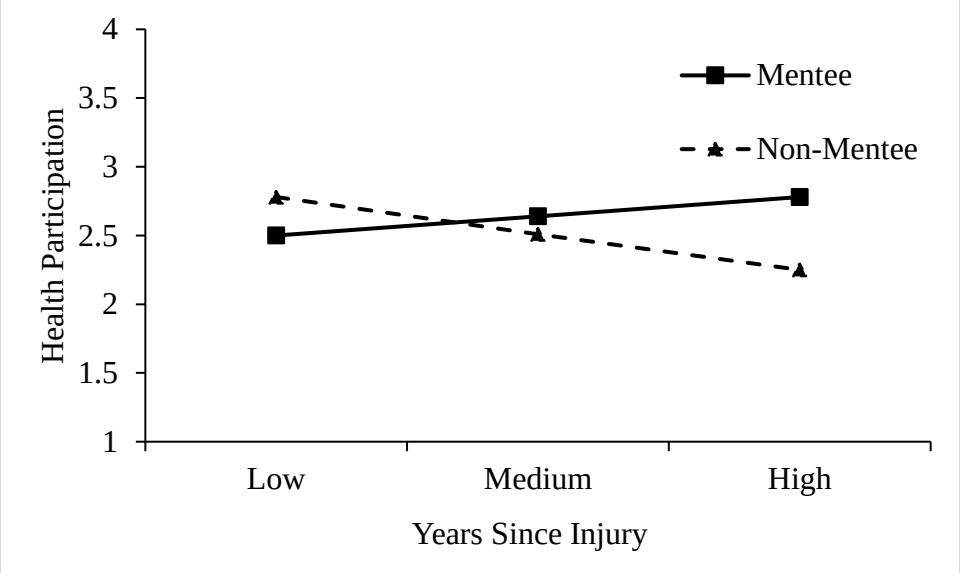
[ii] The square root transformation for participation social relationship rendered the same result, $F(1, 125) = .49$, $p = .49$, $\eta p^2 = .004$.

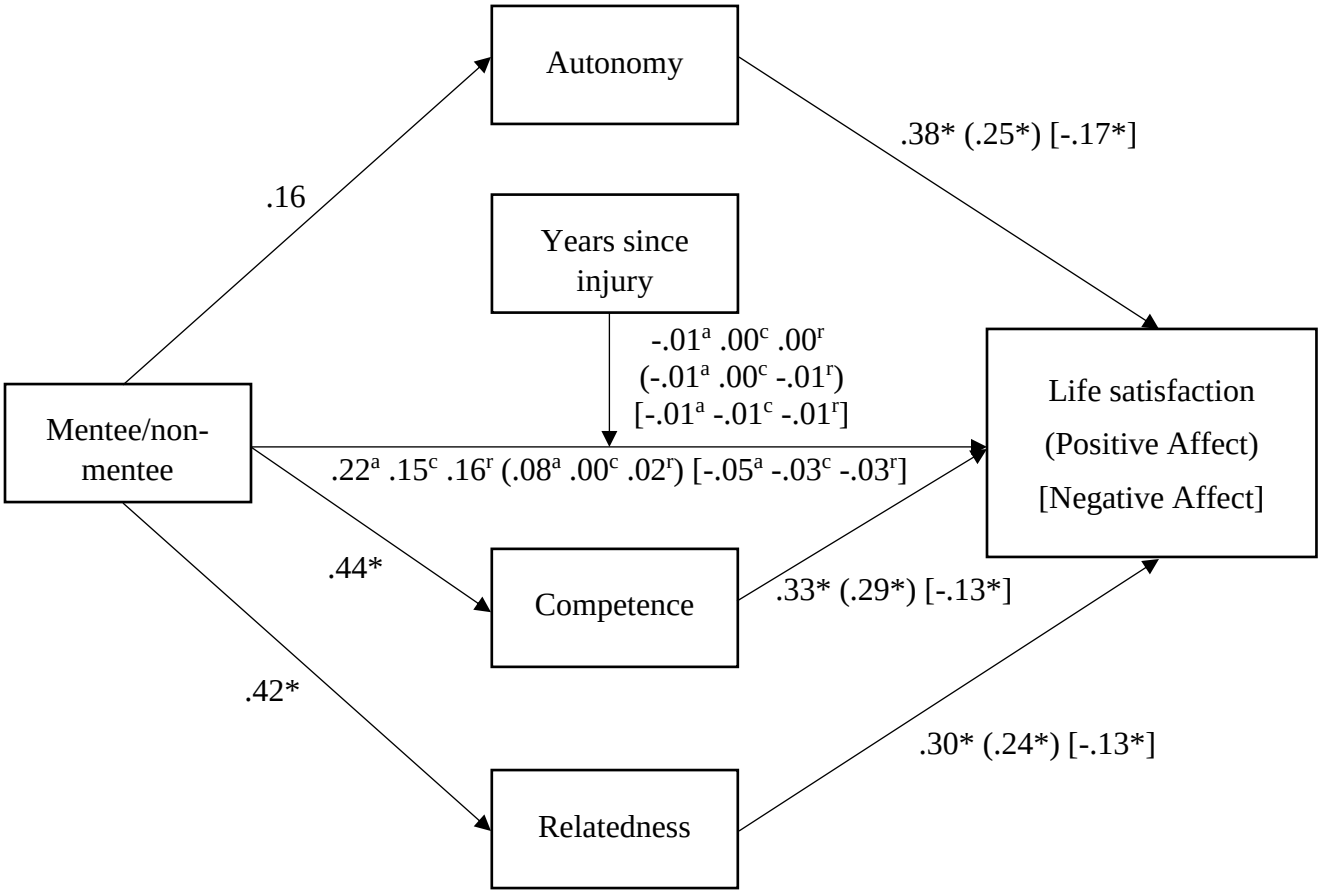

5
4.5
4
3.5
3
2.5
2
1.5
1
Life Satisfaction
Low
Medium
High
Years Since Injury
Mentee
Non-Mentee

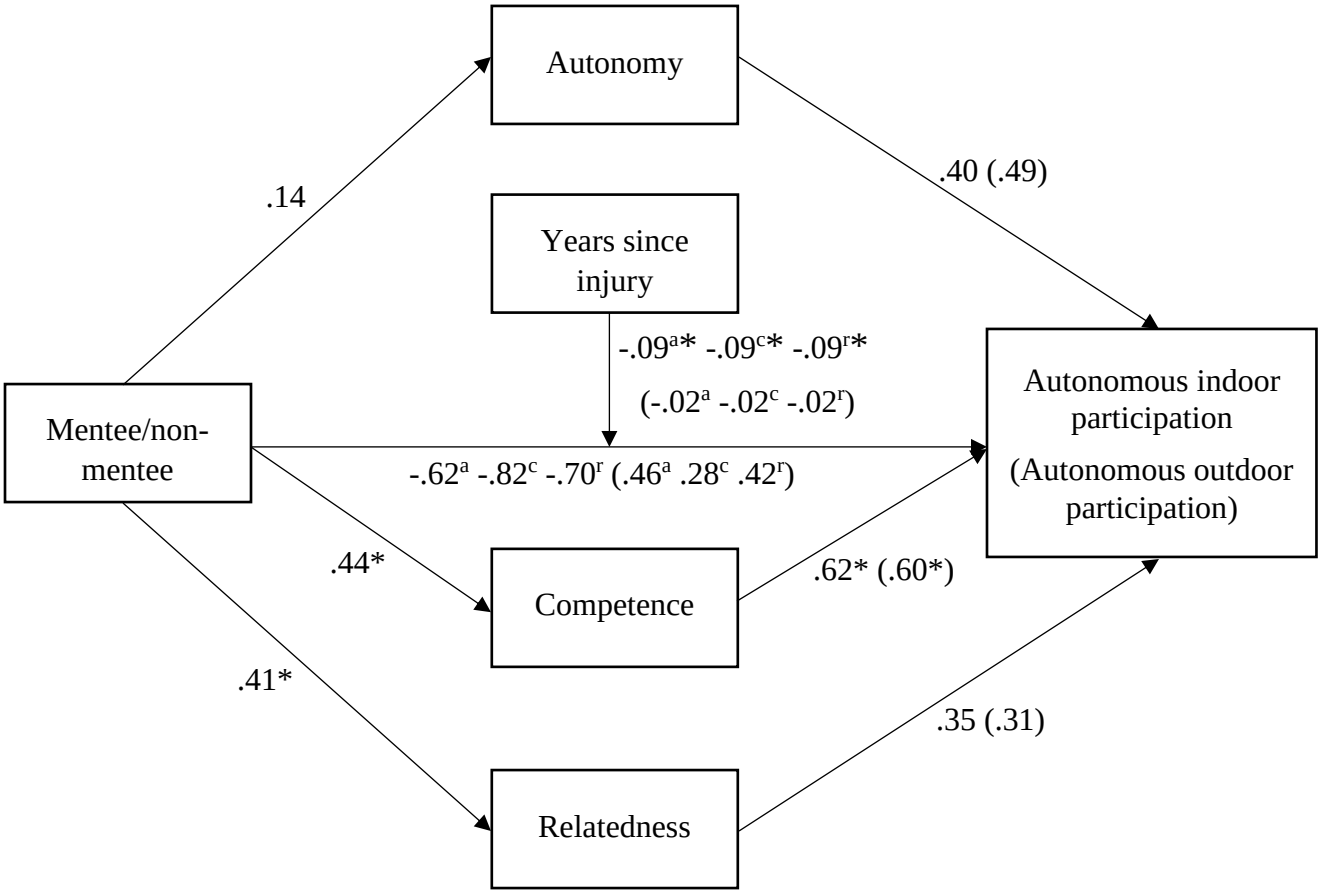

Autonomous Indoor Participation
14
12
10
8
6
4
2
0
Low
Medium
High
Years Since Injury
Mentee
Non-Mentee


Social Relationship Participation
8
7
6
5
4
3
2
1
Low
Medium
High
Years Since Injury
Mentee
Non-Mentee


Family Role Participation
6
5
4
3
2
1
Low
Medium
High
Years Since Injury
Mentee
Non-Mentee


Health Participation
4
3.5
3
2.5
2
1.5
1
Low
Medium
High
Years Since Injury
Mentee
Non-Mentee


Autonomy
.38* (.25*) [-.17*]
.16
Years since injury
-.01[a] .00[c] .00[r]
(-.01[a] .00[c] -.01[r])
[-.01[a] -.01[c] -.01[r]]
Life satisfaction
(Positive Affect)
[Negative Affect]
Mentee/non-mentee
.22[a] .15[c] .16[r] (.08[a] .00[c] .02[r]) [-.05[a] -.03[c] -.03[r]]
.44*
Competence
.33* (.29*) [-.13*]
.42*
.30* (.24*) [-.13*]
Relatedness


Autonomy
.14
.40 (.49)
Years since injury
-.09a* -.09c* -.09r*
(-.02a -.02c -.02r)
Autonomous indoor participation
(Autonomous outdoor participation)
Mentee/non-mentee
-.62a -.82c -.70r (.46a .28c .42r)
.44*
Competence
.62* (.60*)
.41*
.35 (.31)
Relatedness

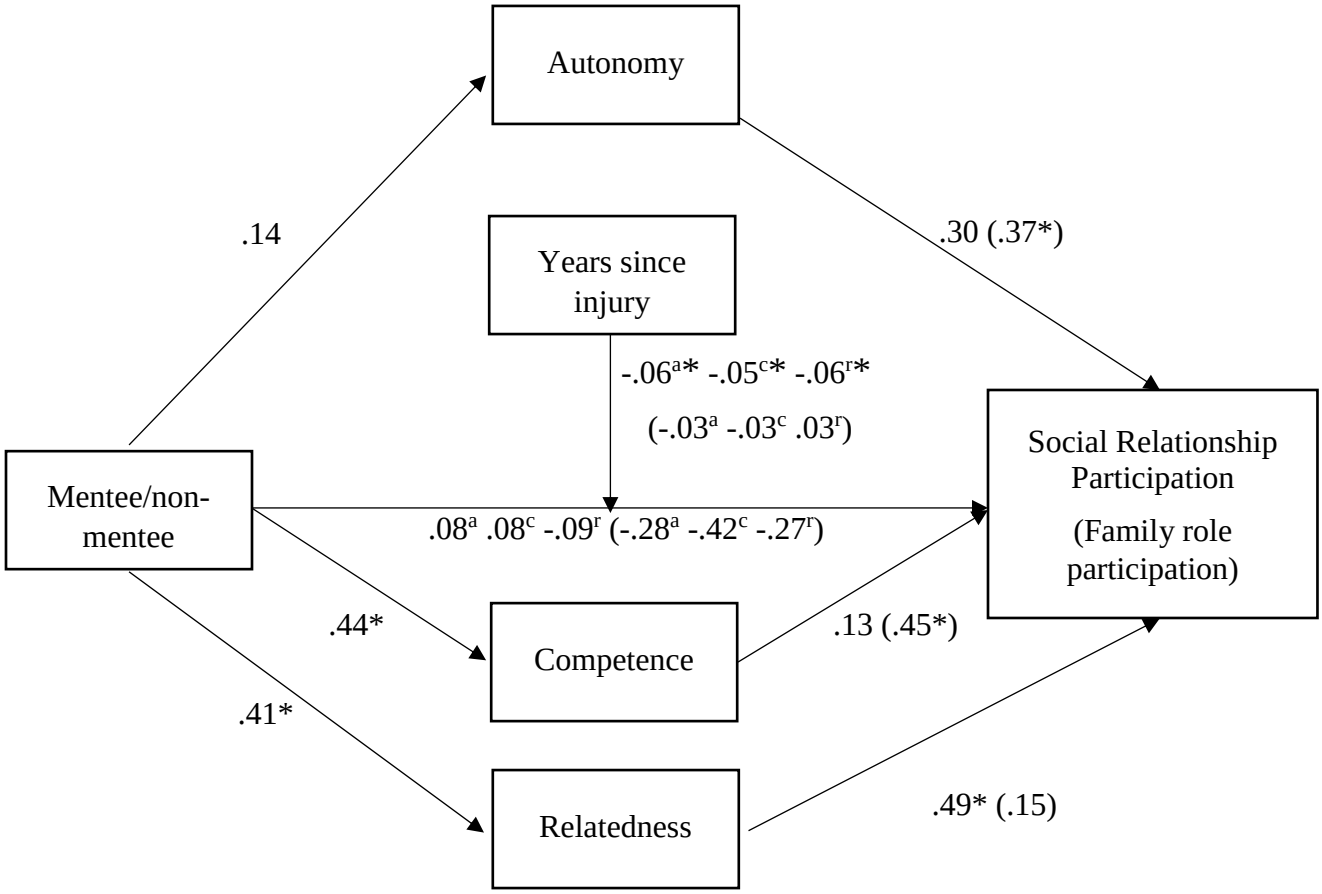

Autonomy
.14
.30 (.37*)
Years since injury
-.06a* -.05c* -.06r*
(-.03a -.03c .03r)
Social Relationship Participation
(Family role participation)
Mentee/non-mentee
.08a .08c -.09r (-.28a -.42c -.27r)
.44*
Competence
.13 (.45*)
.41*
Relatedness
.49* (.15)

Table 1. Demographic and spinal cord injury variables by mentees and non-mentees

	Mentees	Non- mentees		
Continuous variables	Means (SD)	Means (SD)	t-test (df)	Cohen's d
Age	50.0 (12.9)	53.0(12.3)	1.36(129)	0.24
Years since injury	14.1(13.5)	20.1(12.8)	2.59(129)*	0.46
Categorical variables	n (%)	n (%)	X^2 (df)	Cramer's V
Gender				
Male	48 (72)	46 (73)	.03(1)	.02
Female	19 (28)	17 (27)		
Ethnicity				
White	64 (94)	62 (98)	1.64(1)	.11
Other	4 (6)	1 (2)		
Marital Status				
Single/Divorced/Widowed	33 (49)	37 (59)	1.37(1)	.10
Married or Common law	35 (51)	26 (41)		
Education				
High School or lower	23 (34)	29 (46)	4.76(3)	.19
Post-secondary	45 (66)	33 (52)		
ASIA				
A	32 (47)	25 (40)	3.20(4)	.17
B	4 (6)	4 (6)		
C	11 (16)	9 (14)		
D	10 (15)	17 (27)		
E	1 (1)	2 (3)		
Level of injury				
Tetraplegia	35 (51)	26 (41)	1.18(1)	.10
Paraplegic	32 (47)	35 (55)		
Adapted house				
Yes	55 (81)	54 (86)	.55(1)	.07

No	13 (19)	9 (14)		
Mobility Aid				
Power wheelchair	16 (24)	11 (17)	.81(1)	.08
Other	51 (75)	52 (83)		
Adapted public transportation				
Yes	59 (87)	46 (73)	2.74(1)	.15
No	9 (13)	15 (24)		
Adapted vehicle				
Yes	47 (69)	38 (60)	1.11(1)	.09
No	21 (31)	25 (40)		

Table 2. Group differences on quality of life and participation variables

Variables	Mentees	Non-Mentees	F (dfs)	p	Partial eta-square
	Means (SD)	Means (SD)			
Life satisfaction	4.22 (.90)	4.01 (.90)	2.24 (1,120)	.14	.02
Positive affect	3.50 (.82)	3.40 (.69)	0.62 (1,120)	.43	<.01
Negative affect	1.89 (.68)	1.98 (.67)	0.10 (1,120)	.76	<.01
Participation					
Autonomous indoors	10.79 (3.32)	11.59 (3.31)	0.70 (1, 123)	.40	.01
Autonomous outdoors	7.60 (3.06)	7.37 (2.53)	0.01 (1, 127)	.92	<.01
Social relationship	6.76 (1.20)	6.39 (1.63)	0.69 (1, 125)	.41	.01
Family role	4.47 (2.06)	4.88 (2.03)	0.62 (1, 123)	.43	.01
Health	2.59 (.94)	2.48 (1.02)	0.81 (1, 128)	.37	.01
Work/Education	2.04 (1.76)	2.05 (1.82)	0.15 (1, 127)	.70	<.01

Note. The values presented are unadjusted for the covariates.

Table 3. Interaction coefficients (B), variance (R^2), change in variance (ΔR^2) and significance (95% bias corrected confidence intervals (bCI)) of the moderation between SCI peer mentorship and years since injury on quality of life and participation variables

Outcome variables	B	95% bCI		R^2	ΔR^2
		Lower bCI	Upper bCI		
Life satisfaction	.03	0.003	0.05	.14	.04
Positive affect	.02	-.003	.04	.11	.02
Negative affect	-.01	-.02	.01	.17	.003
Participation					
Autonomous indoors	.10	.02	.18	.33	.03
Autonomous outdoors	.07	-.004	.15	.10	.03
Social relationship	.06	.03	.10	.23	.07
Family role	.08	.03	.14	.17	.06
Health	.03	.01	.06	.08	.04
Work/Education	.03	-.02	.08	.06	.01

Note. Significance is determined when the 95% bCI does not cross 0. ΔR^2 = variance explained by the interaction term only (beyond the covariates and the main effects of SCI peer mentorship and YSI)

Table 4. Indirect effect coefficients (B) and significance (95% bias corrected confidence intervals (bCI)) of the competence and relatedness need satisfaction of self-determination theory between SCI peer mentorship and the quality of life and participation variables.

	Competence			Relatedness		
		95% bCI			95% bCI	
Outcome variables	B	Lower bCI	Upper bCI	B	Lower bCI	Upper bCI
Life satisfaction	.15	.04	.32	.13	.01	.29
Positive affect	.13	.02	.26	.10	.01	.22
Negative affect	-.06	-.14	.00	-.05	-.15	.00
Participation						
Autonomous indoors	.28	.04	.73	.14	-.04	.51
Autonomous outdoors	.27	.04	.63	.13	-.06	.52
Social relationship	.06	-.04	.26	.20	.02	.47
Family role	.20	.03	.53	.06	-.07	.33
Health	.03	-.04	.12	.03	-.03	.17
Work/Education	.11	.03	.78	.01	-.21	.22

Note. Significance is determined when the 95% bCI does not cross 0.