

Contribution of Community Integration to Quality of Life for Participants of Community-Based Adaptive Sport Programs

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Abstract

The purpose of this study was to examine the contribution of community integration to quality of life (QOL) for people with disabilities who were the participants of community-based adaptive sport programs. Specifically, it was hypothesized that community integration contributes to physical, psychological, social, and environmental QOL. Out of 240 individuals from the mailing list of the Adaptive Sports Center (ASC) in Crested Butte, Colorado, a total of 93 individuals responded to the questionnaire that measured community integration and quality of life. The multiple regression analysis controlling for age, gender, and marital status was conducted to assess the predictors for QOL domains. Community integration was the only factor that significantly predicted psychological domain, social relationships, and environment domain. However, community integration did not predict to an overall QOL. This study showed connections between community integration and QOL for participants of community-based adaptive sport programs. Further investigation on the relationships between community integration and the specific domains of QOL is necessary in the future for a better understanding of the phenomena.

KEYWORDS: *Community Integration, Reintegration, Quality of Life, Adaptive Sports, Therapeutic Recreatio*

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Quality of life (QOL) for individuals with disabilities has been recognized as an important issue in the health care field. Thus, improving QOL has become a major goal as well as an important outcome in providing services for this population (e.g., Dawson, Markowitz, & Stuss, 2005; Fabian, 1991; Pain, Dunn, Anderson, Darrah, & Kratochvil, 1998; World Health Organization, 2001). Although definitions of QOL vary, there is general agreement that individuals' statements of satisfaction with major aspects of daily functioning are the crucial indicators of subjective QOL (Priebe, Roeder-Wanner, & Kaiser, 2000). As the experience of disabilities is multifaceted (Swanson, Swartz, Elbogen, Wagner, & Burns, 2003), researchers examining QOL have focused on measuring various aspects of life such as work, health, leisure, and community integration (e.g., Anderson & Lewis, 2000; Brown, Gordon, & Haddad, 2000; Gaite et al., 2002; Lee & McComick, 2004, 2006; Ritsner, 2003). Active engagement in activities and community integration, the latter of which has been defined in terms of successful engagement in occupational, social, and community activities (e.g., Dijkers, 1999; Felce & Emerson, 2001), have been identified as important factors predicting QOL (e.g., Huebner, Johnson, Bennett, & Schneck, 2003; Schonherr, Groothoff, Mulder, Schoppen, & Eisma, 2005).

Engagement in Activity and QOL

Previous research suggests that active engagement in social activities is strongly associated with high QOL of individuals with disabilities (e.g., Huebner et al., 2003; Kennedy, Lude, Taylor, 2006; Levasseur, Desrosiers, & Noreau, 2004; Schonherr, Groothoff, Mulder, & Eisma, 2005; Warr, Butcher, & Robertson, 2004). Warr et al. reported that engagement in social activity among older adults facilitated a sense of confidence and that higher activity level was more highly correlated with increased levels of psychological well-being. Likewise, Lucas and Fujita (2000) reported that people engaging in social activity more frequently demonstrated better well-being than those who enjoyed solitary activities. More importantly, a number of leisure studies have shown that leisure activities play an important role in improving QOL (e.g., Duvdevany & Arar, 2004; Labronici, Cunba, Oliveira, & Gabbai, 2000; Tasiemski,

Kennedy, Gardner, & Taylor, 2005). Tasiemski et al, for example, examined the relationships between recreational sports participation and life satisfaction and found that respondents with spinal cord injuries (SCI), who were involved in sports or physical recreation, demonstrated higher satisfaction with life in general than those not participating in physical activities. Another study using a sample of 85 adults with intellectual disability explored the role of leisure activities and friendships on QOL and found that participants with more frequent leisure activity involvement and more friendships experienced higher QOL than those with less leisure participation and less friendships (Duvdevany & Arar).

Researchers in the field of therapeutic recreation have also noted the important relationship between leisure engagement, community integration, and QOL. As healthcare services continue to transition from traditional inpatient services toward offerings within the community, the importance of leisure is being further acknowledged (Hutchinson & McGill, 1998). In fact, ensuring opportunities for leisure engagement is being promoted as an important goal for a wide variety of rehabilitative services (Sylvester, Voelkl, & Ellis, 2001). The effectiveness of community integration programs has been observed in populations such as older adults with mental health issues (Hebblethwaite & Pedlar, 2005), refugees from various countries (Kensing, Gearig, Boor, Olson, & Gras, 2007), and individuals with SCI (Dattilo, Caldwell, Lee, & Kleiber, 1998). It can be assumed that therapeutic recreation practitioners will see a steady growth in opportunities to provide community integration as an important rehabilitative service.

Community Integration and QOL

In addition to the relationships between engagement in leisure activity and QOL, previous literature has demonstrated that community integration is an important factor for the experience of life satisfaction and high QOL. Some researchers reported a statistically significant relationship between community integration and life satisfaction (e.g., Bramston, Bruggerman, & Pretty, 2002; Dijkers, 1999; Reistetter, Spencer, Trujillo, & Abreu, 2005; Stalnacke, 2007; Stancliffe, Emerson, & Lakin, 2001). An empirical study on intellec-

tual disability showed that community integration is the most effective means of promoting positive life experiences for people with disability (Stancliffe et al.). Specifically, Bramston et al. reported that high sense of community was associated with high life satisfaction for individuals with intellectual disability. Another study supported that higher levels of community integration were associated with higher life satisfaction for people with SCI (Dijkers). One the other hand, in a longitudinal study, Charlifue and Gerhart (2004) reported that declined community reintegration over time was associated with decreased QOL. In addition, Duvdevany and Arar (2004) emphasized the importance of involvement in relevant leisure programs and social skill development for successful community integration. Community integration has been considered an important intervention goal for improving QOL (Brown et al., 2000; Reistetter et al.).

Previous literature provides evidence that life satisfaction and QOL of individuals with disabilities are strongly related to community integration (e.g., Bramston et al.; Dijkers; Gal-ski, Tompkins, & Johnston, 1998; Huebner et al., 2003; Levasseur et al., 2004); however, few studies have explored the role of community integration on the specific domains of QOL for people with disabilities. Because chronic health problems restrict work and negatively contribute to QOL (Levasseur et al.), community integration through active engagement in leisure activities appears to be a critical element in improving QOL, which is a common goal among both inclusive and therapeutic recreation practitioners.

Purpose Statement and Research Hypothesis

The purpose of this study was to examine the contribution of community integration to QOL for people with disabilities who were the participants of community-based adaptive sport programs. Specifically, it was hypothesized that higher scores in self-reported community integration would be related to higher scores in physical, psychological, social, and environmental QOL.

Methods

Respondents

The sample of this study was drawn from mailing lists of former and current participants of the Adaptive Sports Center (ASC) in Crested Butte, Colorado. Two criteria were used in selecting participants for the study: (a) individuals had a physical or cognitive illnesses or disability, and (b) they were required to have appropriate cognitive ability to complete the instruments. A recreation therapist working at the center identified 240 potential participants who met the study inclusion criteria. A research information packet including a cover letter explaining the purpose of the study, a research questionnaire, a self-addressed envelope, and a consent form was sent to the 240 potential research respondents. To ensure confidentiality, staff at the ASC affixed the mailing labels to envelopes and sent the packet to the potential respondents. Follow-up reminders were sent to the participants 4 weeks after the questionnaires had been distributed.

The final sample consisted of 93 respondents with the response rate of 39%. The majority of respondents were male (61.3%) and Caucasian (96.8%) with a mean age of 43 years old (range = 18-78, $SD = 13.7$). Approximately 45.2% of the individuals were single and 36.6% were married. A total of 44.1% of the sample had full-time jobs. The respondents completed an average of 15.6 years education (range = 11-19, $SD = 2.86$), indicating undergraduate education as an average academic background. With regard to disability types, 36.6% of the respondents had SCI, 31.7% had developmental disabilities, and another 31.7% had orthopedic-related impairment. The average length of time since the injury was 21 years (range = 1 to 56 years, $SD = 15.31$), which shows that the respondents do have chronic illness.

Instrumentation

Quality of life. Quality of life was measured using the World Health Organization's Quality of Life Assessment (WHOQOL). The WHOQOL is a generic quality of life instrument in that it was designed to be applicable to people living under different circumstances, conditions, and cultures (WHOQOL Group, 1998). The WHOQOL-BREF contains 26 items belonging to four domains: physical

health, psychological health, social relationships and environment. It also includes a section on overall quality of life and general health. The WHOQOL-BREF domain scores demonstrate good discriminant validity, criterion validity, content validity, test-retest reliability, and internal consistency (e.g., Aigner et al., 2006; WHOQOL Group, 1998). The internal consistency of the WHOQOL-BREF domains in this study (Cronbach's alpha: .81 on physical health; .68 on psychological health; .69 on social relationships; and .72 on environment) were similar to research supported by the WHOQOL Group (Cronbach's alpha: .80 on physical health; .76 on psychological health; .66 on social relationships; and .80 on environment; WHOQOL Group, 2005). For reliability purposes the WHOQOL-BREF domain scores were converted to a 0 to 100 scale as recommended by the WHOQOL Group (2005) for easy comparisons to other validated questionnaires.

Community integration. Community integration was measured using the Community Integration Measurement (CIM), which assesses people's perceived connections within their community (Reistetter et al., 2005). Respondents rated aspects of 10 Likert-type questions on a 5-point scale, where 1 represents "always disagree" and 5 represents "always agree." The average of domain items was calculated from scale scores. Cronbach's alpha of community integration scores ($\alpha = .81$) was similar to previous studies (Minnes et al., 2003; Reistetter et al.). Along with these measures, demographic variables such as age, gender, education, marital status, and other personal characteristics were also collected.

Data Analysis

Descriptive statistics (e.g., mean, standard deviation, percentile) were used to examine the nature and relationships of study variables. Correlation coefficients were calculated to examine the relationships between community integration, QOL, and all demographic variables before entering all the variables into regression analyses. This analysis was used to identify underlying associations prior to including variables in a hierarchical regression analysis, which allows variables with greater theoretical importance to be entered earlier than other variables in the analysis (Tabachnick &

Fidell, 2001). For the assessment of the impact of community integration on QOL, hierarchical regression analysis controlling for age, gender, and marital status was computed for each of the domains of the WHOQOL-BREF. Two blocks of independent variables were entered sequentially to examine the contribution of each block to explained variance (R^2) in each of the QOL domains. The three demographic variables (i.e., age, gender, marital status) were entered into the first block analysis, and then the community integration variable was added into the second block in order to examine the unique contribution of community integration.

Results

Descriptive statistics (see Table 1) show the mean distribution of the community integration and the WHOQOL-BREF domains. The mean of CIM was 4.45 ($SD = 0.51$) with a range of 2.80 to 5.00. On average, respondents strongly felt that they had connections within their communities. In addition, respondents experienced satisfaction in the four domains of QOL. The mean of the environmental domain was the highest ($M = 78.89$, $SD = 11.96$), followed by overall QOL ($M = 77.20$, $SD = 15.09$), psychological QOL ($M = 74.20$, $SD = 12.70$), physical QOL ($M = 73.42$, $SD = 16.30$), and social QOL ($M = 65.62$, $SD = 20.64$). The sample reported highest satisfaction on condition of their living place ($M = 4.45$, $SD = .63$) and the lowest satisfaction on sex life ($M = 3.06$, $SD = 1.16$).

The correlation matrix (see Table 2) identified a number of statistically significant relationships between demographic variables, community integration, and each domain of QOL (i.e., physical health, psychological health, social relationship, and environment). Two socio-demographic variables showed significant relationships with other research variables. Age was significantly inversely correlated with marital status ($r = -.49$, $p < .01$) and physical health ($r = -.33$, $p < .01$), suggesting that older respondents were less likely to be married and more likely to report lower levels of physical QOL. Interestingly, gender was significantly associated with environmental domain indicating that women tended to report higher level of environmental QOL than men did, although gender was not associated with other QOL domains. Community integration

TABLE 1

Descriptive Statistics for Study Variables

Variables	n	min	max	mean	SD
Community Integration	90	2.80	5	4.45	.51
Physical QOL	88	28.57	100	73.42	16.30
Psychological QOL	89	41.67	100	74.20	12.70
Social QOL	88	16.67	100	65.62	20.64
Environmental QOL	90	43.75	100	78.89	11.96
Overall QOL	91	20.00	100	77.20	15.09

TABLE 2

Zero-order Correlation Coefficients of Independent and Dependent Variables

Variables	Age	Gender	Marital	CI	Physical	Psychol.	Social	Environ.	Overall
Age	1.00	.02	.49**	.12	-.33**	-.13	.07	.07	-.24*
Gender		1.00	.17	.10	-.15	-.04	.13	.25*	.01
Marital Status			1.00	.03	-.21*	.08	.12	.19	-.18
Community Integration				1.00	.23*	.38**	.48**	.46**	.18
Physical QOL					1.00	.56**	.20	.45**	.57**
Psychol. QOL						1.00	.50**	.52**	.63**
Social QOL							1.00	.50**	.34**
Environ. QOL								1.00	.35**
Overall QOL									1.00

Note. * $p < .05$, ** $p < .01$, *** $p < .001$; Psychological QOL = Psychol. QOL; Community Integration = IC

was positively related to all of the QOL domains (physical, $r = .22, p < .05$; psychological, $r = .38, p < .01$; social, $r = .48, p < .01$; environmental, $r = .46, p < .01$): however, it was not significantly associated with overall QOL. This result demonstrates that the respondents who reported higher CIM scores were more likely to experience higher QOL on each of the domains, but CIM was unrelated to overall QOL. In addition, intercorrelations of WHOQOL-BREF domains indicated that scale values on these domains are not independent although each domain measures different perspectives of QOL.

Multiple regression analysis (see Table 3) was conducted to assess the predictors for QOL domains. Although gender and marital status were significantly related to two of the QOL domains when examining simple correlations, they were not significant predictors of any particular QOL domains in the regression analyses. Results did indicate that age and community integration significantly contributed to the physical domain of QOL ($R^2 = .20, p < .01$). Community integration ($\beta = .28, p < .05$) was positively associated with physical QOL, while age ($\beta = -.33, p < .05$) was

negatively associated with physical QOL. In addition, community integration was the only statistically significant predictor in explaining the environment domain ($\beta = -.45; R^2 = .28, p < .001$), social relationships ($\beta = -.45; R^2 = .22, p < .01$), and the psychological domain ($\beta = -.40; R^2 = .18, p < .01$). Overall, the pattern of findings from the regression analyses appears to indicate that in this sample, community integration has a stronger relationship to those QOL domains relevant to social and environmental domains, a weaker relationship to psychological QOL and a weaker still relationship with physical QOL (as measured by the CIM). Finally, community integration was not a significant predictor of overall QOL ($R^2 = .10$).

Discussion

The purpose of this study was to examine the contribution of community integration to QOL for people with disabilities participating in an adaptive sports program. Based on the idea that community integration plays an important role in experiencing QOL, this present study hypothesized that community integration contributes to the experience of high physical, psychological, social, and environmental QOL.

TABLE 3

Hierarchical Regression Analysis of Quality of Life

Variables	Physical		Psychological		Social		Environ		Overall	
	B(SE)	β	B(SE)	β	B(SE)	β	B(SE)	β	B(SE)	β
Constant	58.19 (15.17)		37.76 (11.90)		-16.49 (18.23)		24.60 (10.44)		62.96 (12.19)	
Age	-.40 (.14)	-.33	-.20 (.11)	-.23	-.01 (.17)	-.01	-.07 (.10)	-.08	-.24 (.14)	-.21
Gender	-4.75 (3.50)	**	-1.42 (2.66)	-.06	1.94 (4.24)	.05	4.47 (2.42)	.18	.91 (3.37)	.03
Marital Status	-.734 (2.38)	-.14	2.06 (1.80)	.14	1.12 (3.01)	0.4	2.80 (1.62)	.19	-1.69 (2.28)	-.09
Community Integration	8.96 (3.25)	.04	9.91 (2.56)	.40	17.66 (3.96)	.45	10.49 (2.24)	.45	5.90 (3.27)	.20
R ²	.20**		.18		.22**		.28***		.10	
N	88		89		88		90		91	

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Results of the regression analyses supported the research hypothesis concerning the contribution of community integration to physical, psychological, social, and environmental QOL. Findings in this study showed that community integration is a critical factor predicting the four domains of QOL, which is congruent with extensive previous literature on life satisfaction (e.g., Levasseur et al., 2004; Reistetter et al., 2005; Stalnacke, 2007; Stancliffe et al., 2001). In terms of social participation through engagement in activities, Harlow et al. stated that social participation and community-based activities predicted life satisfaction, whereas sedentary and solitary activities such as watching television or reading were not associated with well-being. Similarly, Tasiemsk, Kennedy, Gardner, and Taylor (2005) reported that an active sporting life-style is positively associated with general life satisfaction. They also found that people engaging in sports or physical activities demonstrated higher life satisfaction than those not participating in physical recreation. More specifically, another study found that playing basketball regularly helped people with physical disability with social integration, leading to higher levels of QOL (Labronici et al., 2000).

Although community integration was a significant predictor on specific QOL domains, it did not significantly contribute to overall QOL. The result of this study indicates that community integration for this sample was a better predictor of satisfaction with specific aspects of daily functioning rather than overall QOL. Previous research has indicated that individuals with disabilities frequently report lower levels of QOL and life satisfaction (U.S. Department of Health and Human Services [HHS], 2001). This general trend might account for lower QOL scores in this sample and the nonsignificant relationship between community integration and overall QOL. For instance, asking individuals about their overall QOL may be an overly broad approach that might ignore specific strengths and needs.

In terms of demographic factors, the role of age in the present study is consistent with findings by Kilian, Matschinger, and Angermeyer (2001) in that it was significantly associated with physical QOL. Kilian et al. examined the impacts of chronic illnesses on subjective QOL and reported that age significantly contributed

to QOL change. In addition, gender has been known as a critical factor relating to individuals' QOL. For example, Kilian et al. stated that males rate their physical QOL higher as compared to females. Another study showed that males' perceived well-being was more positively affected by family and social activities when compared with a group of females (Warr et al., 2004). While gender was not a significant predictor of QOL in this study, it was correlated to environmental QOL, suggesting a relationship needing further investigation.

Although extensive research has explored the relationships between community integration and life satisfaction for people with disabilities, few studies support the finding that community integration predicts specific aspects of QOL. This study showed connections between community integration and QOL. Further investigation is necessary on the relationships between community integration on specific QOL domains.

Implications for Therapeutic Recreation Specialists

Therapeutic recreation specialists and recreational therapists clearly recognize community integration as an important component of successful rehabilitation (Sylvester et al., 2001). Brown et al. (2000) argued that community integration is a viable rehabilitation goal for improving QOL for people with disabilities. The current study verifies this argument with findings that community integration was significantly associated with all four domains of QOL. Successful community integration is clearly an important and worthwhile goal for individuals with illness and disability and should be an important priority for recreational therapists.

Recreational therapists should also consider the importance of community integration throughout the TR process. When considering the potential impact of community integration and how it might influence various domains of QOL, it seems critical that recreational therapists develop more effective strategies for assessing needs and evaluating changes that result from such programs. The CIM used in this study could be used to accomplish this task. Furthermore, recreational therapists should continue to explore how the provision of various types of recreational activities and

interventions most powerfully affect community integration and any resulting changes in quality of life.

The possible inter-relationships between the specific domains should also be considered by practitioners and studied by researchers. For example, Schalock (1999) has suggested that, while physical exposure to the community or simply living in the community does not automatically guarantee positive experiences, it is necessary for the development of a sense of community. Developing a sense of community can then provide a feeling of shared emotional connection, memberships, and sense of belonging (McMillan & Chavis, 1986). Understanding such interactions can provide insight into how to develop and deliver effective community integration programs.

A final, but related, implication is that recreational therapists should consider the fact that the impact of community integration on QOL in this study was observed within the specific domains, but not in the overall QOL measure. This is important because it reinforces the need to acknowledge these different areas of community integration in program development, treatment or inclusion planning, and evaluation of outcomes. Understanding specific areas of need regarding quality of life and targeting these areas through community integration is an approach to programming that has the potential to revolutionize how services are delivered across a variety of populations and settings.

Limitations

Some methodological issues must be considered when interpreting the results of this study. First, the findings of this study are limited by the nature of the sample. The respondents in this study were participants of one community-based program in a particular area. Involvement in the Adaptive Sports Center programs was an inherent criterion for being selected to participate in the study, which excludes nonparticipants from the study population. The reasons for not participating in the Adaptive Sports Center programs are also potential barriers to community integration, such as level of disability or lack of social supports. Thus, it is possible that those excluded from the study by these factors would have different

response patterns with regard to their perceptions to community integration and QOL.

In addition, this study showed possible relationships between community integration and QOL based on a sample with a variety of different types of disabilities. Because the respondents in this study experienced various types of physical disability, any unique patterns associated with disability type were not able to be detected. It is recommended that future studies explore the contribution of community integration to QOL focusing on a specific disability types for better understanding of the phenomena.

When considering these limitations, as well as the low response rate from this study (39%), it is imperative that results be generalized with caution. It is also imperative that future research examine the diverse subgroups that are within the targeted study population, but that were not specifically considered in the current study sample.

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