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Heterosexual Romantic Relationships, Interpersonal Needs, and Quality of Life in Prison

Rodrigo J. Carcedo¹, Daniel Perlman², Félix López¹, and M. Begoña Orgaz¹

¹Universidad de Salamanca (Spain)

²University of North Carolina at Greensboro (USA)

The purpose of this study was to investigate the moderating effect of having vs. not having a heterosexual romantic partner inside the prison on the relationship between interpersonal needs and quality of life. In-person interviews were conducted with 55 male and 64 female inmates from the Topas Penitentiary (Spain). Higher levels of social loneliness and lower levels of sexual satisfaction were associated with lower levels of quality of life. In addition, the interaction between sexual satisfaction and romantic partner status was significant. Higher levels of sexual satisfaction were associated with higher levels of quality of life only for the group without a partner. These findings support a “bad is stronger than good” principle and indicate the detrimental aspects that can be associated with not having a satisfactory sexual life while incarcerated.

Keywords: prison, partner status, loneliness, sexual satisfaction, quality of life, ex post facto study.

El objetivo de estudio era investigar el efector moderador del hecho de tener una pareja heterosexual dentro de prisión vs. no tenerla sobre la relación entre las necesidades interpersonales y la calidad de vida. Se llevaron a cabo entrevistas personales con 55 presos varones y 64 mujeres del Centro Penitenciario de Topas (España). Niveles altos de soledad social y niveles bajos de satisfacción sexual se asociaron con niveles más bajos de calidad de vida. Asimismo, la interacción entre la satisfacción sexual y el estado de pareja fue significativa. Niveles más altos de satisfacción sexual se asociaron con niveles más altos de calidad de vida tan sólo en el grupo sin pareja. Estos hallazgos resaltan la importancia de permitir a los internos tener relaciones de pareja heterosexuales dentro de la misma prisión, así como favorecer el que puedan tener una vida sexual satisfactoria durante el tiempo que están encarcelados.

Palabras clave: prisión, estatus de pareja, soledad, satisfacción sexual, calidad de vida, estudio ex post facto.

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Correspondence concerning this article should be addressed to Rodrigo J. Carcedo. Departamento de Psicología Evolutiva y de la Educación, Universidad de Salamanca. E.U. de Magisterio de Zamora. “Campus Viriato”. Avda. Cardenal Cisneros, 24, 49022 Salamanca (Spain). E-mail: rcarcedo@usal.es

The literature on prison inmates clearly attests to the difficulties these individuals have in fulfilling their interpersonal needs, although these needs are of paramount importance for inmates' well-being and psychological health (Biggam & Power, 1997; Carcedo, López, Orgaz, Toth, & Fernández-Rouco, 2008; Lindquist, 2000; Lindquist & Lindquist, 1997). This study has examined the association between inmates' interpersonal needs and their quality of life.

Most prisons around the world are designed either for men or for women only. Some countries, especially in Europe (International Center for Prison Studies, 2008; Quaker Council for European Affairs, 2007), incorporate a female wing into a male prison. Nevertheless, contact between men and women is not usually allowed. Exceptions to gender segregation policies do, however, exist: Some prisons in Spain house men and women in the same facility. These prisons allow inmates to share some activities and to start romantic relationships with one another. These romantic relationships between inmates have proven to be beneficial for the inmates' interpersonal and psychological state (Carcedo et al., 2011). In this study, we extended previous research by examining whether partner status plays a moderating role in the relationship between the inmates' fulfilment of interpersonal needs (as indexed by loneliness and sexual satisfaction) and their quality of life.

As a basis for predicting and explaining possible relationships among these variables, the basic interpersonal needs theory (BINT; López, 1997, 2008), the "bad is stronger than good" principle, and the hierarchical-compensatory model of support (Cantor, 1979) will be utilized.

Inmates interpersonal relationships

The prison literature has highlighted the difficulties that prison inmates might encounter in trying to have satisfying romantic (Carcedo, 2005; Fishman, 1988) and sexual relations (Carcedo, 2005; Levenson, 1983; Maeve, 1999; Neuman, 1982) while imprisoned. These difficulties have also been extended to their relationships with loved ones, including friends and relatives (Biggam & Power, 1997; Carcedo, 2005; Cooke, Baldwin, & Howison, 1990; Manzano & Balmaseda, 2003). Interpersonal relationships can be quite helpful in ameliorating distress, given their possible buffering effects (Sarason, Sarason, & Pierce, 1990). Prison inmates have been identified as an at-risk population for having poor psychological health because of the distress associated with incarceration (Toch, 1977; Zamble & Porporino, 1988).

Basic interpersonal needs theory (López, 1997, 2008) is a contemporary theory that explains the influence of interpersonal aspects on well-being. According to this framework, the first need, called the *social need*, is to have a social network (López 1997). It generally refers to one's

belongingness to a community, and it implies friendship-like relationships. When people do not fulfil this need, they can experience social loneliness, feelings of marginalization, and boredom. The second need, known as the *emotional need*, is to establish unconditional and durable affective bonds. This refers to the attachment bond that is generally established with parents in infancy (e.g., relationship between mother and child; López, 1993) and with a partner in adulthood (Hazan & Shaver, 1994). When this need is not fulfilled, feelings of emotional loneliness, insecurity, abandonment, and lack of protection may occur. Finally, the need of pleasurable body contact and intimacy (also called *sexual need*) is met through intimate interpersonal relationships associated with the desire, attraction, and/or love directed toward a sexual partner. Not satisfying this need can result in experiencing sexual frustration and sexual dissatisfaction. Fulfilling these three needs is necessary for the individuals' well-being (López, 2008).

This theory has already been applied to the situation of prison inmates. Carcedo et al. (2008) found that social and sexual needs (social loneliness and sexual satisfaction measures) were the most important needs for inmates' psychological health for both genders. In the current study, we examined if social loneliness and sexual satisfaction would appear as the main predictors of quality of life.

Inmates' relational status

The most common relational status for a prison inmate is not having a romantic or marital partner. Recent U.S. studies have found that between 15-18% of male as well as female inmates are married (Jiang & Winfree, 2006; Lindquist, 2000). For the inmates who had a partner before imprisonment, divorce is a common occurrence during incarceration (Marsh, 1983; Sack, 1977), especially in the case of women (Dodge & Pogrebin, 2001). Those who remain in a relationship experience difficulties in keeping in touch with their non-incarcerated partners, due to complications with visits in prison which result in a low frequency of contact (Carcedo, 2005; Fuller, 1993; Manzano & Balmaseda, 2003).

Most of the literature that focuses on consensual romantic or sexual relationships inside the prison is based on same-sex partners, and is more focused on the relationships between women than men (for a review, see Koscheski, Hensley, Wright, & Tewksbury, 2002). Having both men and women in the same prison is a very rare, and, even when male and female prisoners are housed in the same institution, the prison administration seldom allows the inmates to start a heterosexual romantic relationship with another inmate. However, in our last study (Carcedo et al., 2011) involving three categories of inmates (those with no partner, those with a non-incarcerated partner, and those with a partner in the same prison), the inmates with a heterosexual partner inside the same prison showed the

lowest levels of romantic loneliness, and the highest levels of sexual satisfaction, global quality of life, psychological health, and environmental quality of life.

Moderating effect of partner status on the relationship between loneliness and sexual satisfaction with quality of life

As other authors have reported in studies examining the links between relationship quality and factors such as loneliness, self-esteem, happiness, and/or depression, partner status can play an important moderator role (Cantor, 1979; Demir & Tyrell, 2008; Pinquart, 2003). For example, in a study involving college students, Demir and Tyrell (2008) found that friendship quality only correlated significantly with self-esteem, happiness, and depression among the group of students without a romantic partner. In this regard, we consider the hierarchical-compensatory model (Cantor, 1979) discussed below as a valuable tool to explain a possible moderator role of partner status on the association between interpersonal needs (social, family, and romantic loneliness, and sexual satisfaction) and quality of life. Due to these results, we think that it is necessary to further study the moderating effect of partner status in the relationship between interpersonal needs and quality of life in prison inmates.

The Cantor model (1979) postulates an order of preference in the choice of the support providers. Kin are generally seen as the most appropriate support givers, followed by significant others, and lastly by formal organizations. In a marriage, the spouse is the primary source of support because this person fulfills the needs for intimacy, attachment, and social support (Beach, Fincham, Katz, & Bradbury, 1996). In cases in which the initially preferred provider is absent, other groups (e.g., friends, acquaintances, neighbors, etc.) act as replacements in a compensatory manner. This is consistent with previous findings showing that non-kin relationships (as reflected in reports of social loneliness) proved to be the most important predictor of prison inmates' psychological health (Carcedo et al., 2008).

Based on a comprehensive review of psychological research, Baumeister, Bratslavsky, Finkenauer, and Vohs (2001) proposed the principle that "bad is stronger than good." These authors observed in different fields of study, including close relationships and health, that the negative events (e.g., being abandoned by friends, partners, relatives, etc.) had more impact than positive ones (e.g., gaining friends, partners, etc.) on individuals' well-being. Consistent with these findings, Proulx, Helms, and Buehler (2007) conducted a meta-analysis, and found that the negative aspects (e.g., conflict, loneliness, etc.) of romantic relationship predicted personal well-being more strongly than the positive aspects (e.g., marital satisfaction).

As we understand these two theoretical perspectives, they have differing implications for the moderating role

of partner status in the relationships between interpersonal needs and quality of life. Based on the Cantor model, we would expect that the needs related to romantic life (as indexed by romantic loneliness and sexual satisfaction) will be stronger predictors of quality of life than needs unrelated to romantic life (i.e., social and family loneliness) for the inmates with a partner, and less important for the inmates without a partner at the current moment. Individuals with a partner can rely primarily on that romantic relationship as a source of their well-being; individuals without a partner will need to rely on other, compensating relations.

By contrast, based on the "bad is stronger than good" principle, we would expect to find that the needs related to romantic life will be stronger predictors of quality of life for the inmates without a partner than for the inmates with a partner. Our thinking here is that those without a partner are in a worse situation than those with a partner for satisfying their romantic and sexual needs. Bad things are expected to have more importance and, by extension, the key dimensions inherent in bad situations should have more impact than the key dimensions inherent in positive situations. Thus, we interpret these two models as making different predictions and therefore wished to empirically test the form, if any, that the moderating role of partner status has on the relationships between interpersonal needs and quality of life.

Partner status groups and control variables

As noted previously, inmates can have no partner, a non-incarcerated partner who lives outside the prison or an incarcerated partner living in the same prison as themselves. In our previous study, we found that in terms of interpersonal and quality of life states, prison inmates with a partner outside were more similar to the prison inmates without a partner than to those with a partner inside (Carcedo et al., 2010). Also the number of inmates who have a non-incarcerated partner is small. For these reasons, in this study we will only focus on the inmates with a heterosexual partner inside the same prison and those without a partner.

Other variables have been related to inmates' quality of life and related-measures. For example, a set of sociodemographic and penitentiary variables have been demonstrated to be important. Poorer mental health has been experienced by inmates who are female (Lin, Dean, & Ensel, 1986; Lindquist, 2000; Pearlin, 1989; Turner, Lloyd, & Wheaton, 1995), younger, Caucasian (Lindquist, 2000), and who have longer sentences and a longer expected time prior to their release (James & Glaze, 2006). Due to these findings, we decided to include gender, age, ethnic group-nationality, total time in prison, actual sentence time served, and estimated time to parole as control variables when predicting quality of life measures.

Method

Participants

One-hundred and nineteen medium-security prison inmates (55 men and 64 women) from the Topas penitentiary provided data for this study. The mean age was 34.46 years old, with the participants ranging between 20 to 62 years old. Regarding nationality, 50.42% were Spanish whereas 49.58% were foreigners. With respect to the romantic partner status, 49.58% had no partner and 50.42% had a partner inside the same prison. Given the sex ratio of the inmate population (see below), women were more likely than men to have another inmate as a romantic partner. All the relationships studied were heterosexual, although 3 women reported to have had some sexual contact with women inside the prison in the past 6 months. At the start of the study, the medium-security inmate population in this prison was comprised of 1212 men and 73 women. During the study, the population size increased significantly. We selected the participants in order to have a similar number of men and women. After stratifying by gender, most inmates in the sample were randomly selected; a small segment of the sample (under 20%) was selected following the "snowball technique" (Goodman, 1961). Participants were excluded from this study if they: (a) had been in prison for less than six months, the time considered necessary to adapt to prison life and develop new relationships inside the facility; (b) did not speak Spanish or English; (c) had been diagnosed with a serious mental disorder; or (d) were not in an optimal condition to be interviewed (e.g., due to being under the influence of drugs or having high levels of anxiety or distrust toward the interviewer). From the total, only 8 participants declined or said they were not interested in the interview. All of the participants found the interview to be a positive experience in which they also had a time to express their personal feelings and worries.

Procedure

This study is part of a larger project that involved two interview sessions with each participant in a private room of his/her modules, separated from the rest of inmates. All the interviews were conducted by the same interviewer to foster consistency. Both sessions consisted of questions formulated specifically for this project and standardized questionnaires. We mixed both kinds of measures in two sessions and the duration of completing all the interviewer-administered questionnaires was kept short (approximately 30 minutes) in order to make sure the participants did not get tired and to avoid the "interrogation effect" which, from our work experience, can easily create distrust in the prison inmates.

In general, the first session lasted between 60-90 minutes. Before starting the interview, we spent a significant

amount of time building trust with every inmate (usually around 20 minutes, but depending on the inmate rapport, in some special cases it took up to 2 hours). Afterwards, participants were invited to partake and were informed about the possibility of leaving the study whenever they wish. Also, participants were informed about the confidentiality and anonymity of the study, which means that any information given during the interview would not be divulged and their names would not appear in any printed reports. The second session, conducted a week later, lasted only around 30 minutes. Predictors and control variables were included in the first session whereas the outcomes were assessed during the second one. We consider that respecting all of these conditions is extremely important to collecting good quality data from this population.

Data analysis

Pearson correlation coefficients were calculated to explore the inter-relations among variables. Hierarchical regression analyses were used to assess whether interpersonal needs (predictors) were able to explain the quality of life measures (outcomes), while controlling for the participant's age, gender, ethnic group-nationality, total time in prison, actual sentence time served, and estimated time to parole, and to study the potential moderating effect of participants' romantic partner status. In doing the regression analysis, we followed the procedures recommended by Cohen and Cohen (1983). In the first step, the control variables were included. In the second step, the only predictors used were partner status and those interpersonal needs that, on a bivariate level, had shown significant associations with each kind of quality of life measures for the total sample or for some of the two partner statuses ("conditional effects", also called "main effects" in the ANOVA designs—see Hayes & Matthes, 2009). In the third step, the interactions of partner status by interpersonal needs were selectively introduced. Interactions were included for interpersonal needs that either correlated significantly with outcomes in only one relational status group, or whose direction of associations with outcomes differed in the two relational status sub-samples. Using this strategy, we attempted to produce a model that could be applied to all prison inmates, independently of their romantic partner status.

SPSS 17.0 was used for data analysis. This program and the MODPROBE script (Version 1.2) developed by Hayes and Matthes (2009) were used for probing and plotting the interactions. The *pick-a-point* approach (Aiken & West, 1991; Cohen, Cohen, West, & Aiken, 2003; Jaccard & Turrisi, 2003) was utilized. This procedure selects representative values of the moderator variable (in this case, two categories: 0 "no partner", and 1 "partner inside") and then estimates the effect of the focal predictor at those values.

Measures

Predictor variables

Social and emotional loneliness. The short version of the Social and Emotional Loneliness Scale for Adults (SELSA-S; DiTommaso, Brannen, & Best, 2004) was used to measure both types of loneliness. In fact, SELSA-S consists of three subscales labelled (a) social loneliness, (b) family-emotional loneliness, and (c) romantic-emotional loneliness. Participants rated 15 items, 5 of every subscale. Items were rated on a 7-point Likert-type scale that ranged from 1 (*strongly disagree*) to 7 (*strongly agree*). The total score of every subscale is obtained by adding the individual scores and dividing them by the number of items answered by each participant, with the possible scores ranging from 1 to 7. There is no total score of loneliness because this measure comes from a multidimensional perspective of loneliness. Alphas were .87, .91, and .92 for social, family-emotional and romantic-emotional loneliness, respectively.

Sexual satisfaction. The subscale of sexual satisfaction of the Multidimensional Sexual Self-Concept Questionnaire (MSSCQ; Snell, 1995) was used to measure this aspect. A total of 5 items were scored on a 5-point Likert-type scale that ranged from 1 (*not at all characteristic of me*) to 5 (*very characteristic of me*). The total sexual satisfaction score is obtained by adding the individual scores and dividing them by the number of items answered by each participant, with possible scores ranging from 1 to 5. Alpha was .96.

Moderating variable

Partner status. This item was rated as 0 for inmates without a partner and 1 for inmates in a heterosexual romantic relationship inside the prison. The classification of inmates into one or the other of the relational status groups was based on inmates' self-reports.

Outcome variables

Quality of life. The short Spanish version of the *World Health Quality of Life* scale (WHOQOL-BREF; Lucas, 1998) was used to assess global quality of life and its four domains: physical health, psychological health, social relationships and environment. Twenty-six items were scored on a 5-point Likert-type scale that ranged, with different labels, from 1 (*not at all; very dissatisfied; never*) to 5 (*extremely-completely; very satisfied; always*). Domain scores were obtained by adding the individual scores and dividing them by the number of items answered by each participant, with a possible range from 1 to 5. The global quality of life score is represented by an individual item. Alphas were .68, .75, .69, and .69 for physical health, psychological health, social relationships, and environment subscales, respectively.

Control variables

Age. Inmates were asked to state their ages, and this variable was confirmed using inmate penitentiary records to ensure accuracy.

Gender. This variable was coded as 0 for females and 1 for males.

Nationality. Nationality was split into Spaniards (0) versus foreigners (1).

Total time in prison. This variable was obtained from the sum of all time spent in a prison for previous and current offenses. It was collected by reviewing inmates' penitentiary records and recorded in months.

Actual sentence time served. This item denotes the time spent in prison since the last entry (i.e., during the current prison term). It also was extracted from inmate penitentiary records and listed in months.

Estimated time to parole. After discussing with the legal advisors from Topas Penitentiary, we chose to take three-quarters of participants' actual sentences as the expected

Table 1

Means and standard deviations for all the sample, and correlations between the variables for inmates who have no partner (above the diagonal) and have a partner inside the same prison (below the diagonal)

Variables	M	SD	1	2	3	4	5	6	7	8	9
1. Global quality of life	3.14	.56	—	.76***	.83***	.63***	.71***	-.50***	-.07	-.05	.36**
2. Physical health	3.90	.68	.78***	—	.53***	.24	.27*	-.20	.14	.15	.12
3. Psychological health	3.42	.74	.81***	.55***	—	.51***	.42***	-.43***	-.06	-.10	.30*
4. Social relationships	3.07	1.12	.55***	.33*	.39**	—	.53***	-.64***	-.32*	-.02	.26*
5. Environment	2.28	.64	.79***	.40**	.49***	.35**	—	-.42***	-.18	-.24	.49***
6. Social loneliness	3.59	1.92	-.52***	-.32*	-.43***	-.71***	-.31*	—	.28	.05	-.04
7. Family loneliness	2.28	1.74	-.03	.08	-.10	-.03	-.02	.13	—	-.11	.12
8. Romantic loneliness	4.35	2.42	-.18	-.07	-.22	.05	-.16	.22	-.01	—	-.47***
9. Sexual satisfaction	2.37	1.46	.15	-.12	.24	.01	.25	-.07	.20	-.43***	—

*p < .05; **p < .01; ***p < .001.

Table 2
Predictors of the prison inmates' quality of life measures

	Global quality of life			Physical health			Psychological health			Social relationships			Environment		
	Mod. 1	Mod. 2	Mod. 3	Mod. 1	Mod. 2	Mod. 3	Mod. 1	Mod. 2	Mod. 3	Mod. 1	Mod. 2	Mod. 3	Mod. 1	Mod. 2	Mod. 3
	<i>b</i> (<i>SE</i>)														
<i>Step 1: Control variables</i>															
Age	-.004 (.007)	-.001 (.005)	-.001 (.005)	-.009 (.008)	-.005 (.008)	-.005 (.008)	-.004 (.009)	-.001 (.008)	-.001 (.008)	.014 (.012)	.002 (.009)	.001 (.009)	.006 (.008)	.008 (.007)	.008 (.007)
Gender	-.338** (.108)	.184 (.129)	.207 (.125)	-.076 (.130)	.303 (.181)	.303 (.182)	-.371* (.144)	.197 (.179)	.220 (.177)	-1.091*** (.200)	-.246 (.220)	-.160 (.214)	-.345** (.125)	.129 (.162)	.151 (.160)
Nationality	.135 (.108)	.199* (.091)	.210* (.088)	.335* (.131)	.392** (.125)	.391** (.126)	.346* (.144)	.435*** (.127)	.447*** (.125)	-.070 (.201)	.044 (.157)	.058 (.152)	-.087 (.125)	-.061 (.114)	-.050 (.112)
Total time in prison	-.001 (.002)	-.001 (.001)	-.001 (.001)	-.002 (.002)	-.001 (.002)	-.001 (.002)	.001 (.002)	.002 (.002)	.002 (.002)	-.002 (.003)	-.001 (.002)	.001 (.002)	-.003 (.002)	-.003 (.002)	-.003 (.002)
Actual sentence served	.001 (.002)	.001 (.002)	.002 (.002)	.001 (.002)	.001 (.002)	.001 (.002)	.000 (.003)	.001 (.002)	.001 (.002)	.003 (.004)	.002 (.003)	.002 (.003)	.002 (.002)	.002 (.002)	.003 (.002)
Estimated time to parole	-.005* (.002)	-.004* (.002)	-.004* (.002)	-.006* (.003)	-.005 (.003)	-.005 (.003)	-.008* (.003)	-.007** (.003)	-.007** (.003)	-.008 (.004)	-.006 (.003)	-.007* (.003)	-.002 (.003)	.001 (.002)	-.001 (.002)
<i>Step 2: Interpersonal needs + moderator</i>															
Social loneliness	-.157*** (.024)	-.159*** (.023)	-.159*** (.023)	-.111** (.033)	-.108* (.045)	-.108* (.045)	-.187*** (.033)	-.189*** (.033)	-.189*** (.033)	-.370*** (.042)	-.369*** (.040)	-.369*** (.040)	-.122*** (.030)	-.123*** (.030)	-.123*** (.030)
Family loneliness															
Romantic loneliness	-.002 (.041)	-.005 (.040)	-.005 (.040)				-.042 (.058)	-.045 (.057)	-.045 (.057)				.176* (.052)	.166* (.051)	.166* (.051)
Sexual satisfaction	.090* (.040)	.271*** (.075)	.271*** (.075)				.124* (.056)	.306** (.106)	.306** (.106)				.139* (.069)	.443*** (.128)	.443*** (.128)
Partner status	.174 (.190)	.616* (.242)	.616* (.242)		.278 (.167)	.277 (.168)	-.078 (.266)	.369 (.344)	.369 (.344)				.831* (.325)	1.338** (.429)	1.338** (.429)
<i>Step 3: Interactions</i>															
Social loneliness * Pt. status					-.007 (.065)	-.007 (.065)									
Family loneliness * Pt. status															
Sexual satisfaction * Pt status															
ΔR ²		.306*** (.083)	.306*** (.083)		.089** (.037)**	.089** (.037)**		.264*** (.117)	.264*** (.117)				.345*** (.142)	.345*** (.142)	.345*** (.142)
R ²	.152	.459	.496	.136	.235	.235	.130	.393	.415	.261	.606	.639	.125	.342	.368

p* < .05; *p* < .01; ****p* < .001.

Table 3
Conditional effects of sexual satisfaction at partner status variable on quality of life measures

Partner status	Global quality of life			Psychological health			Social relationships			Environment		
	<i>b</i> (SE)	<i>t</i>	95% CI	<i>b</i> (SE)	<i>t</i>	95% CI	<i>b</i> (SE)	<i>t</i>	95% CI	<i>b</i> (SE)	<i>t</i>	95% CI
No partner (0)	.271 (.075)	3.624***	[.123, .419]	.306 (.106)	2.883**	[.096, .517]	.443 (.128)	3.466***	[.190, .697]	.339 (.096)	3.544***	[.149, .528]
Partner inside (1)	.038 (.043)	.887	[-.047, .123]	.071 (.061)	1.165	[-.050, .192]	.037 (.074)	.500	[-.110, .184]	.119 (.055)	2.175*	[.011, -.228]

p* < .05; *p* < .01; ****p* < .001.

time to parole due to the fact that it was the modal parole time. This fact was familiar to the inmates, thus they were likely to expect parole around this time. Clearly, actual time to parole varies depending on inmates' characteristics and behavior. This variable was also recorded in months.

Results

Regarding the total sample, social loneliness was significantly correlated with all the quality of life measures (global quality of life: *r* = -.57, *p* < .001; physical health: *r* = -.28, *p* < .01; psychological health: *r* = -.47, *p* < .001; social relationships: *r* = -.71, *p* < .001; environment: *r* = -.43, *p* < .001). Sexual satisfaction was correlated with all the quality of life measures except with physical health (global quality of life: *r* = .39, *p* < .001; psychological health: *r* = .34, *p* < .001; social relationships: *r* = .35, *p* < .001; environment: *r* = .46, *p* < .001) as romantic loneliness also did (global quality of life: *r* = -.38, *p* < .001; psychological health: *r* = -.29, *p* < .01; social relationships: *r* = -.38, *p* < .001; environment: *r* = -.39, *p* < .001). Finally, family loneliness was only correlated with social relationships (*r* = -.23, *p* < .05).

The correlations were also performed separately for each of the two relational status subgroups. Essentially, social loneliness and sexual satisfaction were significantly correlated with quality of life measures for those inmates without a partner whereas only social loneliness was significantly correlated for those with a partner inside the prison. Family loneliness had significant correlations with social relationships quality of life for the group of inmates without a partner (see Table 1). In sum, more interpersonal needs were associated with quality of life measures for inmates without a partner, social loneliness was the most robust predictor of quality of life, and sexual satisfaction predicted quality of life best for inmates without a partner.

Five hierarchical regression models were tested, one for each quality of life measure (see Table 2). Control variables were included in step 1. Partner status and those interpersonal needs that, on a bivariate level, had shown significant correlations with each kind of quality of life measures were entered in step 2. Finally, interaction terms between partner status and those interpersonal needs that correlated significantly for just one relational status group or whose direction of associations with outcomes was different in the two sub-samples were introduced in step 3. To maintain consistency in the base model, control variables were retained in the model even if nonsignificant.

Social loneliness was a significant predictor for all the quality of life measures, except when predicting physical health. Sexual satisfaction was significantly associated with global quality of life, psychological health, and environmental quality of life (see Model 2 –conditional effects– in Table 2). Lower levels of social loneliness and

higher levels of sexual satisfaction were associated with higher levels of quality of life dimensions. These results confirmed our previous expectations with respect to the importance of social loneliness and sexual satisfaction as predictors of quality of life.

In addition, the partner status sexual satisfaction interaction was significant for all the quality of life measures studied except for physical health (see Model 3 in Table 2). For the four significant interactions, higher levels of sexual satisfaction consistently explained higher levels of each quality of life measure for the group *without* a partner. The level of sexual satisfaction generally did not predict quality of life measures among inmates *with* a partner. The one exception to this generalization was that sexual satisfaction did predict environmental quality of life, albeit only marginally, among inmates with a partner inside (see Table 3). In sum, the overall pattern was that sexual satisfaction was a better predictor of quality of life among those without a partner than among those with a partner. The resulting interaction plots can be seen in Figure 1.

Discussion

In general, the results of our study point out that social loneliness is a significant predictor of all the quality of life measures for both inmates without a partner and those with a partner inside, and that sexual satisfaction is an important predictor of quality of life only for the inmates without a partner. Thus, partner status only plays a moderator role between sexual satisfaction and quality of life.

Looking back at the conditional effects models, social loneliness and sexual satisfaction were the most important

interpersonal needs predicting quality of life measures. Higher levels of loneliness and lower levels of sexual satisfaction predicted lower levels of quality of life. Romantic and family loneliness were not significantly related with any measure of quality of life. This result is consistent with previous findings (Biggam & Power, 1997; Carcedo et al., 2008; DiTommaso & Spinner, 1997), and BINT (López, 1997, 2008). Basing its work on BINT, Carcedo et al. (2008), found that social loneliness (social needs) and sexual satisfaction (sexual needs) were the most important needs for prison inmates' psychological health. Lower levels of social loneliness and higher levels of sexual satisfaction were associated with better psychological health.

In addition to all these findings, lower levels of sexual satisfaction were found to be related with lower levels of quality of life and its dimensions for the group of inmates without a partner but not for the inmates with a partner. Although Carcedo et al. (2008) presented evidence demonstrating a relationship between sexual satisfaction and psychological health for both genders independently of partner status, the current finding of a stronger sexual satisfaction/quality of life correlation among those with no partner further refines our knowledge. The current findings also reflect Lindquist's (2000) point that prisons create unique dynamics that can change the effect of how various predictors operate in prison as opposed to non-prison studies.

This result is consistent with the expectations we derived from "bad is stronger than good principle" (Baumeister et al., 2001). Looking at the means of sexual satisfaction, inmates with a partner inside are moderately satisfied ($M = 3.28$), whereas the inmates without a partner

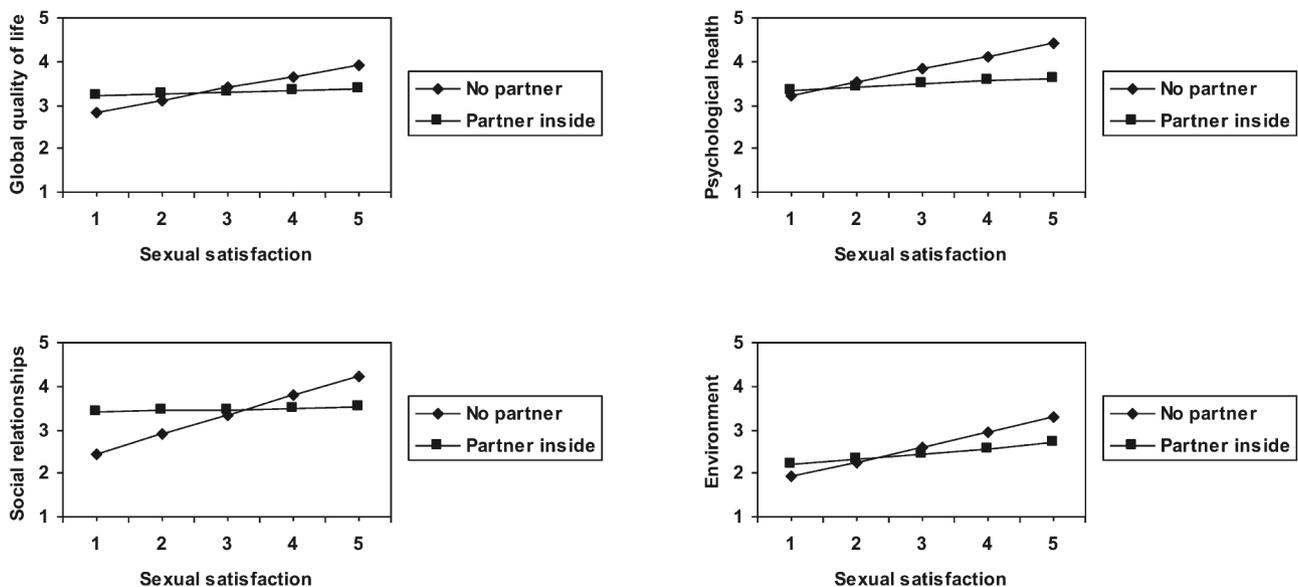


Figure 1. Moderation effect of romantic status in the relationship between sexual satisfaction and quality of life measures.

are very unsatisfied ($M = 1.44$). This approach concluded that negative aspects of our lives are better predictors of well-being than positive aspects. Given the tendency of negative facets of life to play heavily in well-being, it becomes understandable why sexual satisfaction explains more variance in the quality of life in the group without a partner. The findings are not consistent with what we predicted based on Cantor's (1979) hierarchical-compensatory model

Further insight into why the sexual satisfaction/quality of life association is stronger among inmates with no partner can be gleaned from the early prison literature. Those authors discussed the possible negative consequences of sexual abstinence for inmates' health (Levenson, 1983; Neuman, 1982). As conjugal relations within prisons were even rarer than they are today, these authors presumably were referring to inmates without a partner or inmates with a partner outside the prison, both groups without having had sexual relationships for a long time. As we have cited before, the difference between these two groups and the inmates with a partner inside the prison is also that the former groups are more sexually deprived than the latter. It might be that once inmates have reasonably met their sexual needs, sexual satisfaction is no longer a good predictor of their quality of life, especially in prison where several stressors are involved. Therefore, sexual needs would be more important for inmates' quality of life when inmates are sexually deprived than when they can meet these needs. Also for the inmates with a partner inside, the fact of having met emotional needs to some extent could also be making sexual needs less salient.

Some support for this claim can be found in the interviewer's observations and the data gathered from this and another of our previous studies (Carcedo, 2005). In discussing sex, inmates without a partner usually made more references to terms and adjectives related to well-being than did inmates with a partner inside. We suspect that what inmates discuss reflects the importance they attribute to things; that is, we suspect that those without a partner see sex as more crucial to their quality of life than do inmates with a fellow inmate as a romantic partner.

A final argument to explain these findings stems from the possibility of choosing to have or not an active sexual life during imprisonment, and the autonomy to have the sexual life that inmates wish. In this sense, it is logical to think that the inmates without a partner have less opportunity and less autonomy to choose what kind of sexual life they wish to have in comparison with the inmates with a partner inside the prison. In fact, the inmates without a partner or with a partner outside the prison have strongly expressed their feeling of sexual deprivation (Levenson, 1983; Neuman, 1982). Therefore, it is necessary to further study if the crucial point for their well-being is to have sexual relationships or just to give the inmates the opportunity and autonomy to decide how to live their sexual

lives. Any form of deprivation may increase the desire for the deprived object, as reactance theory (RT; Brehm, 1966) posits. The major premise of RT is that individuals wish to operate with a freedom to choose behaviors to satisfy their needs, in this case sexual needs. If their freedom is reduced, threatened, or eliminated, individuals will become "motivationally aroused" to regain this freedom (Brehm, 1966, p.2). Reactance is likely to be high among inmates whose access to heterosexual activity is thwarted by their circumstances, as it occurs in the group of inmates without a partner. This may make sexual satisfaction more important for this group of inmates' well-being than for the inmates with a partner inside the same prison.

In addition, autonomy has also been considered as one of the main needs for well-being, as self-determination theory states (SDT; Ryan & Deci, 2000). Obviously the inmates with a partner inside the same prison operate with more autonomy regarding their sexual lives than the inmates without a partner. Thus, flowing from all these ideas, sexual satisfaction might be more central to the quality of life of inmates without a partner than in the group with a partner inside.

Longitudinal studies of the inmates going from the no partner group to the partner within the prison group (or vice versa) are warranted. Consider those starting without a partner, it would be valuable to demonstrate on a within subject bases (a) that prior to the transition sexual satisfaction is associated with quality of life but this association is non-significant afterwards, and (b) that sexual needs are highly important prior to the transition but decline in importance after the transition. In addition, it would be worthy to isolate a group of inmates who form non-sexual romantic bonds. If our analysis is correct, there should still be a strong sexual satisfaction/quality of life association for this unique population.

Contrary to the original prediction of the hierarchical-compensatory model (Cantor, 1979), interpersonal needs related to romantic life were not more strongly related to quality of life of the inmates with a partner inside than to the quality of life of inmates without a partner. In addition, the non-romantic needs were not more closely associated to the quality of life of the inmates without a partner than the inmates with a partner inside.

However, the fact that social loneliness was the interpersonal need most strongly associated with quality of life measures may provide some ammunition to partially support Cantor's model if emerging evidence on prison dynamics are correct. Carcedo (2005) found that having at least an intimate friend inside prison was the best predictor of social loneliness for both genders. Partner support (close to kin support) might be preferred by the inmates with a heterosexual partner inside the prison. The support of a same-sex close friend inside prison (non-kin support), however, may be more important. It is noteworthy that inmates are housed in sex-segregated modules and have

restricted interaction (e.g., once a week for relatively short periods of time). This means, for example, that when they have a problem, they have no access to their partner right at that moment. Having a close friend may facilitate immediate support: a close friend inside the prison can give a larger quantity and more immediate support than a romantic partner inside, and can also provide inmates more protection from distress. In short, friends may be compensating for the lack of immediate support that an inmate can achieve from a heterosexual partner inside the prison and this may explain the importance of social loneliness as a predictor of the well-being of inmates in both relational status groups.

It would be very interesting to check if these results are the same in a prison where couples can live together in the same cell (as occurs in the Madrid-VI Penitentiary in Spain, where there is a module for couples). Under those circumstances, we would expect romantic loneliness to be a strong predictor of quality of life.

Like virtually all research, this study has some limitations. Even though we think that the sample size is quite large for an interview study focused on an uncommon type of prison population (inmates with a heterosexual partner inside), we need to be cautious in regards to the generalization of the results beyond this particular sample. More research is needed. Although we have used a short-term longitudinal study, we also have to recognize that another limitation of this study is that it is correlational, so causation is difficult to infer. Future long-term longitudinal research would solve this limitation. Also, partner status is partially confounded with gender: more women than men have a partner. However, in Carcedo et al.'s (2008) work, sexual satisfaction was a significant predictor of the psychological dimension of quality of life for both genders. No interaction effect of gender was found. In addition, gender was included as a control variable in the analyses, not being significant in the conditional effects models (Model 2 in Table 2) and in the conditional effects plus interactions models (Model 3 in Table 2). Finally, despite we stressed on the confidentiality and anonymity of the study, homosexual contacts might be underreported by the inmates. Notwithstanding, all the inmates pointed out to have felt very comfortable during the interview and have disclosed important information for them. Future research needs to focus on the differences between having or not consensual homosexual relationships in prison on well-being.

In sum, this study has three main practical implications. First, decreasing social loneliness is one of the best ways to increase inmates' quality of life. Second, allowing inmates to have romantic and sexual relationships with other inmates in prison appears to be a valuable option for them, especially for those without a partner. Thus, having this as a prison policy may be beneficial for inmates' sexual satisfaction and quality of life. One of the dimensions of

quality of life, psychological health, has been associated with other prison inmates' outcomes such as lower rates of misconduct at prison and recidivism once inmates are released (Gendreau, Little, & Goggin, 1996; Wright, Salisbury, & Van Voorhis, 2007). As the third and last implication, we would point out that housing men and women in the same prison can be beneficial, particularly if they are allowed to start romantic relationships and maintain sexual relationships.

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