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ORIGINAL ARTICLE

How is companionship related to romantic partners′ affect, relationship satisfaction, and health behavior? Using a longitudinal dyadic score model to understand daily and couple-level effects of a dyadic predictor

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Abstract

Companionship is related to better affect and relationship satisfaction, but few studies have examined both partners′ perspectives over time and the link between companionship and health. In three intensive longitudinal studies (Study 1: 57 community couples; Study 2: 99 smoker–nonsmoker couples; Study 3: 83 dual-smoker couples), both partners reported daily companionship, affect, relationship satisfaction, and a health behavior (smoking in Studies 2 and 3). We proposed a dyadic score model that focuses on the couple level for companionship as a dyadic predictor with considerable shared variance. On days with higher companionship, couples reported better affect and relationship satisfaction. When partners differed in companionship, they also differed in affect and relationship satisfaction. For smoking, a different picture emerged: Whereas smokers with nonsmoking partners smoked less on average with higher companionship, smokers with smoking partners smoked more on days with higher companionship. Findings show companionship as a consequential

relationship construct deserving further study. Using the dyadic score model acknowledged both partners' perspectives on companionship. It demonstrated higher precision for detecting effects of partner averages in a dyadic predictor compared with traditional approaches, tests for effects of partner differences in a dyadic predictor and in outcome while maintaining the focus on the dyad.

KEYWORDS

affect, companionship, health behavior change, longitudinal dyadic score model, relationship satisfaction, romantic couples, smoking

INTRODUCTION

In recent years, there has been increasing interest in examining specific functions of social relationships that contribute to well-being. Companionship is one form of social connection and a fundamental aspect of close relationships (Alfieri et al., 2016). It is defined as a feeling of fellowship involving emotionally meaningful shared interactions or the engagement in enjoyable shared activities with a significant other such as a romantic partner (Rook, 1987, 2015). Companionship refers thus to shared leisure or other activities undertaken primarily for the intrinsic goal of mutual enjoyment (Rook, 1987).

Rook (2015) delineated three life contexts when companionship occurs: In the absence of stress, companionship satisfies people's need for connectedness in everyday life; when faced with minor stressors, people may welcome a companionate break from dealing with these stressors as a way to relax and replenish their resources; and when faced with chronic stressors that cannot be quickly or directly resolved, people may have an even stronger need for respite and diversion. Therefore, companionship should increase positive affect and decrease negative affect and distress (in the case of chronic stressors, at least intermittently) and strengthen existing relationships by feeling included and valued, thus strengthening relationship satisfaction.

Companionship can be distinguished from other social processes. Social support is defined as an interaction to help with a stressor (Cohen et al., 2000), whereas companionship is not tied to dealing with a stressor. Moreover, companionship is not merely shared leisure time, although they are related. Companionship is more about the quality of the time together, rather than the quantity of time together. Therefore, studies on shared leisure time often add the additional construct of "leisure satisfaction" to touch on this element of companionship (i.e. Hickman-Evans et al., 2018; Johnson et al., 2006; Stapley & Murdock, 2020). In shared leisure time, many social interactions can occur, including social support or companionship, but also mere co-existence or mild discord. For example, when a couple goes for a walk, it counts as companionship when partners experience the walk as enjoyable and pleasant; if they spent the walk arguing, this would not qualify as companionship.

Companionship has frequently been studied in cross-sectional studies of individuals (cf., Rook, 1987; Rook & Iguarte, 1999; Sorkin et al., 2002). We currently do not know if companionship as an everyday life phenomenon fluctuates from day to day and how much partners agree

and differ on levels and fluctuations in companionship. Another open question is whether companionship is also relevant for health behavior in addition to affect and relationship satisfaction. The present article makes thus three extensions to the present companionship literature by (1) considering everyday fluctuations of companionship by using an intensive longitudinal approach, (2) treating companionship as a dyadic construct as both partners of a dyad experience pleasurable social interactions together, and (3) investigating an additional outcome, namely health behavior with smoking behavior as case in point. Thus, this article investigates in three dyadic intensive longitudinal studies (Study 1: 57 community couples; Study 2: 99 smoker–nonsmoker couples; Study 3: 83 dual-smoker couples) romantic couples' companionship in daily life.

Companionship as an everyday life phenomenon

To date, companionship has effectively been linked with affect and relationship satisfaction in several studies of individuals. Prior cross-sectional studies found that people with higher companionship were more satisfied with their relationships, experienced lower negative affect (Bunk & Verhoeven, 1991; Kilbourne et al., 1990; Rhyne, 1981; Rook, 1987), and had a lower risk for divorce (Hill, 1988). However, we currently do not know if companionship is predominantly a relatively stable relationship trait or if it fluctuates over time in everyday life. One aspect of companionship—self-expanding activities, defined as novel, rewarding, arousing, and activating (Aron et al., 2000)—showed in some longitudinal studies positive effects on affect and relationship satisfaction (Aron et al., 2000; Coulter & Malouff, 2013; Graham, 2008; Muise et al., 2019; Reissmann et al., 1993). Most of the studies investigating self-expanding activities as a facet of companionship have been conducted in the laboratory (i.e. Aron et al., 2000; Tomlinson et al., 2018). However, to capture fluctuations and changes over time of daily companionship, it should be investigated in the context of the everyday life of romantic couples, where enjoyable social interactions occur. Intensive longitudinal designs can be used to investigate how companionship fluctuates naturally from day to day in a natural setting and to examine systematic links with affect and relationship satisfaction (Bolger & Laurenceau, 2013).

Companionship as a dyadic construct

It takes at least two people to experience companionship in real life. Therefore, companionship epitomizes a dyadic construct, characterized by reciprocal comfort and fellowship. Therefore, companionship of a dyad is more than just the reports of two individuals. There are currently few studies taking a dyadic approach to companionship, that is studying both partners' perspectives. The current evidence relies heavily on one partner's report of a shared experience and thus neglects overlap and differences between partners. When both partners are studied, we expect them to agree when true companionship occurs. We address companionship as a dyadic construct in theory, study design (by assessing both partners), and data analysis (by modeling partner averages and differences), as both partners of a couple experience pleasurable social interactions together. As each partner's report of companionship within a couple cannot be seen as independent and the overlap in both partners' experience is of as much interest as their differences, we focus on the couple as the unit of analysis instead of the two individuals (Iida et al., 2018). Partner averages highlight the shared experience of a construct for each couple in its totality (i.e. how much companionship the dyad as a whole experienced, assuming that what

is of most interest for understanding a variable is the overall contribution of both partners) rather than each partner's individual perspective (e.g. how much companionship the female partner vs. the male partner experienced, assuming that what is of most interest is each individual partner's perspective). Partner differences highlight how similar the two partners in a dyad are in their reports on a construct (e.g. if the female partner is lower, equal, or higher in companionship than the male partner in this study).

Companionship and health behaviors

Positive social interactions such as companionship play an important role for long-term health and well-being (e.g. Berkman et al., 2000; Holt-Lunstad et al., 2010; Wilson & Novak, 2021), with affect, relationship satisfaction, and health behaviors as potential underlying mechanisms. However, it is currently not fully clear which social interactions contribute to health and companionship has not been investigated in the context of health behavior. We chose smoking behavior as point in case for health behavior because it often occurs within a social context (Meyler et al., 2007), and smoking cessation is a challenging goal pursuit with relational dynamics. There is some evidence that smoking begets smoking: Adolescents start to smoke with smoking peers (Johnston et al., 2012; Tyas & Pederson, 1998), and individuals who smoke, smoke more in the presence of other smokers (Homish & Leonard, 2005; Shoham et al., 2007). Nonsmoking partners often want their smoking partner to quit, but smokers are possibly more ambivalent about a partner's quit attempt. There is also evidence that it is harder to quit with a smoking partner, whereas it is easier to quit successfully if the partner quits as well (i.e. Jackson et al., 2015). Close others also set cues during companionate time: Although a nonsmoking partner displays no cues for smoking, a smoking partner may deliver smoking cues and induce cravings (Conklin et al., 2008), influencing the likelihood of smoking. Therefore, social interactions may have differential effects, depending on the partner's smoking status.

THREE INTENSIVE LONGITUDINAL STUDIES IN COUPLES: OVERVIEW AND AIMS

To examine the role of companionship as a dyadic process in daily life that can impact both relationship and health outcomes, we present data from three intensive longitudinal studies. First, although companionship so far has been treated as a relatively stable construct (cf., Rook, 1987; Rook & Iguarte, 1999), we assess companionship daily and thus can describe how much it fluctuates from day to day around average levels over the study period. Second, although prior research on companionship has often focused on individuals (cf., Rook, 1987; Rook & Iguarte, 1999), we emphasize that companionship is a dyadic construct: We recruit both partners to report daily companionship and outcomes, allowing us to quantify partner differences in addition to partner averages. Third, building on prior research linking companionship with affect and relationship satisfaction (cf., Rook, 1987; Rook & Iguarte, 1999), we extend the range of outcomes by adding health behavior with smoking behavior as case in point. Overall, we propose a longitudinal dyadic score model (DSM) to better understand the links of our dyadic predictor (companionship) with dyadic outcomes (affect, relationship satisfaction, health behavior) on the daily and the couple level.

Study 1 follows couples in a community setting over 35 days to test if previous findings from cross-sectional studies in individuals linking companionship to affect and relationship satisfaction

would replicate in an intensive longitudinal study in romantic couples. Study 2 examines smoker–nonsmoker couples for 1 month during a period when the smoker is attempting to quit. Study 3 examines dual-smoker couples for 1 month around a joint smoking quit attempt.

We made the following hypotheses:

Hypothesis 1. Based on prior evidence that companionship is associated with lower negative affect and higher relationship satisfaction between persons in cross-sectional studies (cf., Rook, 1987; Rook & Iguarte, 1999), we expect that couples with higher average levels of companionship show lower negative affect and higher relationship satisfaction and expect these benefits for positive affect, too.

Hypothesis 2. We expect that similar processes unfold when partners' companionship averages fluctuate from day to day and that these processes are happening relatively quickly, that is that during and for several hours after enjoyable social interactions, negative affect will decrease and positive affect and relationship satisfaction will increase and that this effect will be detectable within a day, as in prior lab studies (i.e. Aron et al., 2000). Therefore, we hypothesise that couples will show lower negative affect and higher positive affect and relationship satisfaction on days with higher companionship than usual.

Hypothesis 3. We expect that differences between partners in companionship are related to differences in affect and relationship satisfaction on the couple level and in terms of daily fluctuations. We assume that these partner differences are meaningful. Therefore, we hypothesise that differences in companionship on the between-couple level (Hypothesis 3a) and on the daily level (Hypothesis 3b) will be associated with differences in affect and relationship satisfaction.

Hypothesis 4a. Because of the presence of less smoking cues with a nonsmoking partner, we expect that smokers with a nonsmoking partner will smoke less with higher companionship averages and on days with higher companionship than usual (Study 2).

Hypothesis 4b. To the contrary, smokers with a smoking partner will experience more smoking cues through their smoking partner and enjoy smoking together; thus, we expect more smoking to relate with higher companionship averages and on days with higher companionship than usual (Study 3).

For Study 3, the specific hypotheses were preregistered and can be found at https://osf.io/dvfja/.

STUDY 1: DAILY COMPANIONSHIP IN ROMANTIC COUPLES

Methods

Design

Study 1 followed community couples recruited from a large urban area in the United States with an intensive longitudinal design over 35 days (for additional details about Study 1, please

see Stadler et al., 2012; data collected 2006–2009). Inclusion criteria were as follows: Both partners were fluent in English, were over 18 years old, were in a committed mixed-gender relationship, had been cohabiting for at least 6 months at the beginning of the study, had high-speed internet access, had a working email address, and were sure that they would be able to fill out the daily online diary for the following 35 days. Ethical approval from the local ethics review board was granted for the study (IRB-AAAC0303).

Participants

A total of 172 participants in 86 mixed-gender couples who lived in the New York metropolitan area participated in the baseline assessment. The companionship items were added from the second wave of recruitment onwards. Of the 60 couples with companionship data, three couples were excluded because only one partner completed the diary. The remaining 57 couples were included in this study. All 57 couples were in committed relationships, All 57 couples were in committed relationships, with 41.0% married and 30.7% having children. The sample was diverse regarding age ($M = 32.54$, $SD = 10.30$ years), ethnic identity (58% White/Caucasian, 11% Hispanic, 16% Black/African American, 13% Asian, 1% other, 1% missing), and working hours ($M = 35.84$, $SD = 18.24$). Most had higher education (88.6%). They had been romantically involved with each other for 6.97 years ($SD = 8.06$) and living together for 5.82 years ($SD = 7.87$). Overall, the couples showed high diary completion rates ($n \geq 3168$ [79.4%] of 57 couples $\times$ 2 partners $\times$ 35 days $= 3990$ possible observations).

Procedure

Recruitment relied mostly on fliers and internet postings. The research team conducted phone interviews with both partners after initial contact to determine eligibility. Participants received up to $145 per person, including a $35 bonus for completing at least five evening entries per week. The research team sent a separate daily email to each partner as a reminder to fill out the online diary every evening within 1 h of going to bed. Participants were instructed to complete the diary entries separately and not to share or discuss their answers with their partner. A member of the research team downloaded the diary data weekly and contacted participants who missed entries by email to check if there were any technical problems and encourage them to fill out the diary every day.

Measures

For 35 consecutive days, both partners reported about their daily experiences in end-of-day diaries. All items were administered in English and had a consistent response format of 1 (Not at all) to 5 (Extremely). Each partner reported in the end-of-day diaries how their relationship felt today, with two items assessing *daily companionship* ("enjoyable" and "fun"). Each partner reported positive and negative affect by rating the items of the short form of the POMS (Cranford et al., 2006). Partners were asked to rate their mood right now, with 8 items assessing *negative affect* ("On edge," "Uneasy," "Blue," "Angry," "Worn out," "Sad," "Exhausted," and "Annoyed") and two items assessing *positive affect* ("Cheerful" and "Lively"). *Relationship satisfaction* was assessed with two items ("contented" and "satisfied").

Data analysis

To model companionship as a dyadic couple-level process over time, we implemented the extended DSM (Iida et al., 2018), depicted in Figure 1. For both independent and outcome variables, we represented couple-level processes as daily partner averages (as means of both partners) and as partner differences (as directed differences, here as female partner minus male partner). Over all time points, we represented couple-level companionship (independent variables) as the overall between-couple level and as daily fluctuations. The dyadic outcome variables (negative and positive affect, relationship satisfaction, and, in Study 3, smoking behavior) reflected daily fluctuations as well as overall level. For all three studies, we used the same data analytic approach implemented in SPSS (example code for Study 1 in Table S1b).

To estimate the reliabilities of measures, we extended the approach used for intensive longitudinal designs for individuals (Cranford et al., 2006; Shrout & Lane, 2012) to dyads, by computing daily partner averages and partner differences for each item and calculating between-couple reliabilities R_{KF} and change reliabilities R_C for partner means and differences. Bivariate correlations of companionship on the couple level and the daily level between male and female partners were calculated. We used multilevel modeling to account for nonindependence in couples' daily observations (Bolger & Laurenceau, 2013). To predict partner averages and partner differences of outcome variables, we used a general linear mixed model. To avoid confounding between-couple level and daily fluctuations (Bolger & Laurenceau, 2013), daily partner averages and partner differences in companionship were split into a between-couple level and a daily level. For the between-couple level, we calculated couple means for partner averages and for partner differences in companionship across the study period and centered each around the grand mean. For the daily level, we calculated couple-centered daily fluctuations (daily partner averages minus couple means in partner averages; daily partner differences minus couple means in partner differences).

These four predictor variables were then related to partner averages and partner differences in outcomes in separate analyses. We adjusted for linear effects over time by including a time variable representing the investigated diary days (centered on the first diary day). Furthermore, we specified a maximal random effects structure for each model (Barr et al., 2013) including random slopes of all within-person predictors. In the case of non-convergence, we reduced the random effect structure successively until reaching convergence. To rule out third-variable explanations for the findings, we ran each model adjusting for weekend and time spent together as well as received emotional social support. Couples may be in better mood and more satisfied
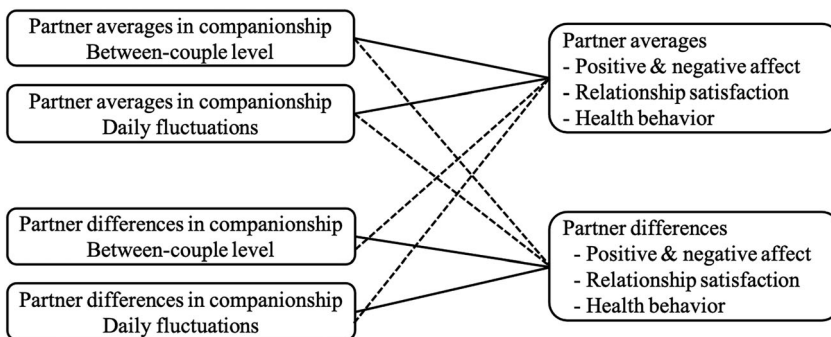

FIGURE 1 Longitudinal dyadic score model for all three studies. *Note*: All three models also included time and Studies 2 and 3 an indicator for quit period that are not shown here.

on the weekend and when they spend more time together and also report higher companionship on these occasions. Support is also related to affect and relationship satisfaction. Because these sensitivity analyses did not produce different patterns of results, we report the more parsimonious models.

Results

Companionship was highly correlated between male and female partners on the couple level ($r = .66$) and moderately on the daily level ($r = .37$), indicating considerable shared variance in the predictor companionship and thus underscoring the need for modeling the dyadic levels and processes, which we implemented with a DSM using partner averages and partner differences in companionship as model predictors. Table 1 provides descriptive statistics for the four key Study 1 variables (companionship, negative and positive affect, and relationship satisfaction) computed as partner averages and partner differences. All variables, including companionship, show evidence of between-couples variability (SD_B) as well as variability in temporal fluctuations (SD_W). Between-couple reliabilities (R_{KF}) are all higher than .90, and reliability of temporal fluctuations (R_C) are all higher than .68, indicating satisfactory to excellent reliabilities, including for difference scores.

Table 2 shows all fixed effects of the multilevel models of Study 1 (for complete statistical results, see Table S1c).

Hypothesis 1. Couples′ affect and relationship satisfaction

We found evidence supporting Hypothesis 1 in two of three outcomes: At the between-couple level, couples with higher levels of companionship showed higher positive affect ($b = 0.56$, $p < .05$) and relationship satisfaction ($b = 0.96$, $p < .05$), but not lower negative affect ($b = -0.04$, ns).

Hypothesis 2. Daily affect and relationship satisfaction

We found consistent evidence on the daily level across all three outcomes in line with Hypothesis 2: On days when couples had higher companionship levels, they showed lower negative affect ($b = -0.21$, $p < .05$) and higher positive affect ($b = 0.48$, $p < .05$) and relationship satisfaction ($b = 0.66$, $p < .05$).

Hypothesis 3. Differences in companionship—between-couple and daily levels

In line with Hypothesis 3, we found evidence in five of six effects that differences in companionship between the two partners predicted differences in outcomes. In couples where the female partner reported higher average companionship than the male partner across the study period, the female partner also reported higher positive affect ($b = 0.51$, $p < .05$) and relationship satisfaction ($b = 0.67$, $p < .05$) than the male partner, whereas between-couple partner differences in companionship were unrelated to negative affect ($b = -0.065$, ns). On days when the female partner reported higher companionship than the male partner, the female partner also reported lower negative affect ($b = -0.12$, $p < .05$) and higher positive affect ($b = 0.42$, $p < .05$) and relationship satisfaction ($b = 0.51$, $p < .05$) than the male partner.

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TABLE 1 Sample characteristics: Means and standard deviations of between-couple levels, standard deviation for daily fluctuations, sample size for couples and time points, and reliability of between-couple levels and within-couple fluctuations.

	Study 1: Community couples							Study 2: Smoker–nonsmoker couples							Study 3: Dual-smoker couples						
	M_B	SD_B	SD_W	N	n	R_{KF}	R_C	M_B	SD_B	SD_W	N	n	R_{KF}	R_C	M_B	SD_B	SD_W	N	n	R_{KF}	R_C
Companionship																					
Partner averages	3.50	0.98	0.87	57	1596	1.00	.85	4.06	0.53	0.82	99	2771	.96	.89	4.31	0.98	0.80	83	2121	.99	.89
Partner differences	0.03	0.46	0.60	57	1596	.98	.72	−0.03	0.29	0.42	99	2771	.91	.67	0.001	0.52	0.42	83	2121	.98	.67
Negative affect																					
Partner averages	1.71	0.36	0.45	57	1594	.99	.82	1.99	0.45	0.44	99	2771	.80	.69	2.05	0.77	0.48	83	2121	.99	.75
Partner differences	0.02	0.21	0.34	57	1594	.98	.76	0.08	0.41	0.38	99	2771	.80	.64	0.10	0.58	0.39	83	2121	.99	.67
Positive affect																					
Partner averages	2.61	0.78	0.74	57	1584	.99	.75	3.64	0.54	0.50	99	2771	.86	.78	3.68	0.72	0.53	83	2121	.99	.76
Partner differences	−0.11	0.44	0.63	57	1584	.98	.70	−0.09	0.39	0.43	99	2771	.78	.73	−0.13	0.60	0.44	83	2121	.99	.68
Rel. satisfaction																					
Partner averages	3.98	1.07	0.79	57	1585	1.00	.79	5.00	0.67	0.86	99	2771	-	-	2.41	0.48	0.38	83	2121	-	-
Partner differences	0.11	0.44	0.60	57	1585	.98	.68	−0.04	0.42	0.51	99	2771	-	-	0.01	0.31	0.27	83	2121	-	-
Smoking																					
Mean smoker/	-	-	-	-	-	-	-	8.17	6.85	6.51	99	2895	-	-	-	-	-	-	-	-	-
Partner averages	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.33	7.44	5.10	83	2109	-	-
Partner differences	-	-	-	-	-	-	-	-	-	-	-	-	-	-	−0.28	3.16	2.26	83	2109	-	-

Note: N = number of couples (individuals), n = number of available diary days, R_{KF} = reliability of between-couple level, R_C = reliability of daily level. We reported the between-couple means (M_B) and the standard deviations of the between-couple levels (SD_B) and daily level within-couple fluctuations (SD_W) for each variable. Rel. satisfaction = Relationship satisfaction.

TABLE 2 Parameter estimates for testing the effects of partner averages and partner differences in companionship on negative affect, positive affect, and relationship satisfaction and behavior in community couples (Study 1), smoker–nonsmoker couples (Study 2), and dual-smoker couples (Study 3)

	Partner averages						Partner differences						Health behavior		Smoking for smoker only		
	Negative affect		Positive affect		Relationship satisfaction		Negative affect		Positive affect		Relationship satisfaction		Smoking (number of cigarettes smoked)				
	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	RR
Study 1: Community couples																	
Intercept	1.80*	0.05	2.59*	0.07	3.99*	0.07	0.017	0.029	−0.13*	0.06	0.13*	0.05					
Time (Day 0 to 34)	−0.21*	0.05	0.040	0.081	−0.020	0.067	−0.007	0.042	0.031	0.069	−0.051	0.061					
Companionship, partner averages																	
Between-couple level	**−0.04**	0.04	**0.56***	0.07	**0.96***	0.07	−0.016	0.027	0.018	0.05	−0.019	0.04					
Daily fluctuations	**−0.21***	0.02	**0.48***	0.02	**0.66***	0.03	**−0.034***	0.014	0.020	0.03	0.022	0.02					
Companionship, partner differences																	
Between-couple level	−0.11	0.08	−0.28	0.16	−0.07	0.15	**−0.065**	0.059	**0.51***	0.11	**0.67***	0.09					
Daily fluctuations	−0.01	0.02	0.02	0.03	−0.06	0.03	**−0.12***	0.021	**0.42***	0.03	**0.51***	0.03					
Study 2: Smoker–nonsmoker couples																	
Intercept	1.98*	0.04	3.76*	0.05	4.99*	0.05	−0.03	0.04	−0.04	0.04	−0.04	0.03			2.66*	0.05	14.25
Time (Day 0 to 31)	−0.003	0.00	−0.0009	0.002	0.003	0.002	−0.001	0.002	−0.004*	0.002	−0.0004	0.002			−0.01*	0.002	1.01
Quit period (Day 10 to 31)	0.08*	0.04	−0.17*	0.04	−0.06	0.05	−0.07	0.04	0.13*	0.04	0.01	0.04			−1.20*	0.11	0.30
Companionship, partner averages																	
Between-couple level	**−0.18***	0.08	**0.14**	0.09	**1.09***	0.07	0.00	0.07	0.02	0.07	−0.02	0.06			**−0.39***	0.11	0.67
Daily fluctuations	**−0.17***	0.01	**0.21***	0.02	**0.79***	0.03	−0.03*	0.013	−0.01	0.01	−0.01	0.02			−0.01	0.01	0.99
Companionship, partner differences																	
Between-couple level	0.11	0.14	−0.26	0.17	−0.01	0.13	**0.69***	0.12	**1.01***	0.11	**−0.19**	0.13			0.08	0.27	1.08
Daily fluctuations	0.01	0.02	0.01	0.02	−0.02	0.03	**0.20***	0.02	**0.58***	0.02	**−0.14***	0.03			0.01	0.02	1.01

(Continues)

TABLE 2 (Continued)

Study 3: Dual-smoker couples	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Smoking in both partners			
													Partner averages		Partner differences	
													Est.	SE	Est.	SE
Intercept	2.02*	0.06	3.75*	0.05	2.36*	0.02	0.12*	0.05	−0.14*	0.04	0.01	0.02	13.48*	0.68	−0.93*	0.41
Time (Day 0 to 31)	−0.01*	0.004	0.001	0.000	0.003*	0.001	−0.001	0.003	0.002	0.002	−0.002	0.001	0.01	0.02	−0.02	0.01
Quit period (Day 10 to 31)	0.25*	0.05	−0.15*	0.05	−0.02	0.02	0.001	0.04	−0.02	0.04	0.03	0.02	−9.12*	0.74	1.20*	0.42
Companionship, partner averages																
Between-couple level	−0.35*	0.10	0.16	0.09	0.38*	0.04	−0.04	0.08	−0.07	0.07	0.02	0.02	0.73	0.92	−0.03	0.73
Daily fluctuations	−0.19*	0.02	0.20*	0.02	0.33*	0.02	−0.03*	0.01	−0.001	0.02	−0.01	0.01	0.18*	0.08	0.002	0.06
Companionship, partner differences																
Between-couple level	−0.19	0.19	0.16	0.17	0.03	0.07	−0.22	0.15	0.75*	0.14	0.31*	0.04	−1.69	1.78	−0.13	1.40
Daily fluctuations	−0.03	0.03	−0.01	0.03	0.02	0.02	−0.11*	0.02	0.17*	0.02	0.22*	0.02	0.03	0.14	−0.04	0.10

Note: Estimates relevant to Hypotheses 1 to 4 are in bold. Study 1: $N = 57$ community couples with a maximum of 35 days. Study 2: $N = 99$ smoker–nonsmoker couples over a maximum of 32 days. Study 3: $N = 83$ dual-smoker couples over a maximum of 32 days. Est. = estimated fixed effects. SE = standard error.

*$p < .05$.

To summarize, the results of Study 1 were largely in line with our hypotheses that companionship is related to higher emotional well-being and relationship satisfaction (see Figure 2).

STUDY 2: DAILY COMPANIONSHIP IN SMOKER–NONSMOKER COUPLES

Methods

Design

Study 2 examined the links of daily companionship with positive and negative affect and relationship satisfaction in the context of smoking cessation. The sample consisted of mixed-gender smoker–nonsmoker couples ($N = 99$). Study 2 was part of a larger project (DIRECT) funded by the Swiss National Science Foundation (100014_124516, for further details about Study 2, see Ochsner et al., 2014, data collected 2009–2011). The study had an intensive longitudinal study design providing no psychological intervention. For inclusion, smokers had to be regular smokers (defined as smoking at least one cigarette per day; WHO, 1998) with the intention to quit smoking during the study period. They had to be in a committed relationship (i.e. either married or in a stable mixed-gender relationship for at least 1 year) with a nonsmoking partner who also was willing to participate in the study and with whom they had lived for at least 6 months. Couples were not eligible if the smoker participated already in a professional smoking cessation program and if one partner was pregnant, in shift work, or not fluent in German. All ethical standards of the 2000 Helsinki declaration were met.
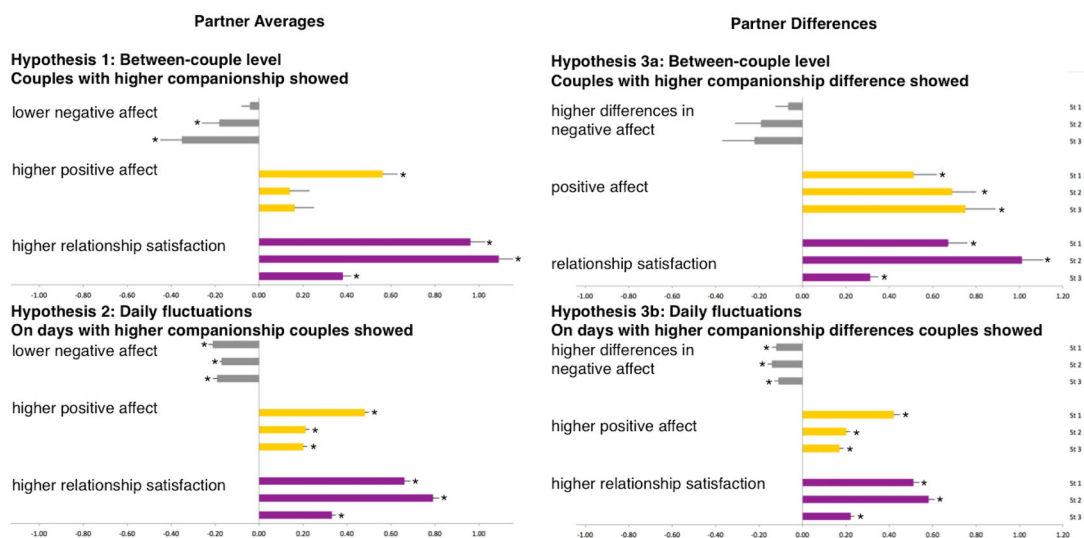

FIGURE 2 Overview of results for affect and relationship satisfaction in Studies 1, 2, and 3. *Note*: In the left upper panel, Hypothesis 1 was partially supported: couples with higher companionship showed lower negative affect (Studies 2 and 3), higher positive affect (Study 1), and higher relationship satisfaction (all three studies). In the left lower panel, Hypothesis 2 was supported in all studies for all three outcomes. In the right upper panel, Hypothesis 3a was supported for positive affect and relationship satisfaction but not negative affect. In the right lower panel, Hypothesis 3b was supported in all studies for all three outcomes. [Color figure can be viewed at wileyonlinelibrary.com]

Participants

A total of 106 smokers and their nonsmoking partners participated in the baseline assessment. To be included in the longitudinal DSM, the smoking and nonsmoking partner had to fill out the diary items for the predictor companionship and the outcomes affect and relationship satisfaction at least once on the same day between the quit day (Day 11) and the end of the diary period (Day 32). Six smokers dropped out before their self-set quit date, and only the smoking partner filled out the daily assessments in another couple. Of the 99 couples with enough data for the DSM, the majority were married (66%) and about half had children (58%). In line with higher prevalence rates of smoking in men, more male smokers participated (72%). Smokers were from the German-speaking part of Switzerland and ranged widely in age ($M = 40.48$, $SD = 9.82$, $range = 19$–72 years) and education (70% reported attending 9 years of school, 27% had higher education). Nonsmoking partners were from the German-speaking part of Switzerland and ranged also widely in age ($M = 38.89$, $SD = 9.70$, $range = 20$–63 years) and education (54% reported attending 9 years of school, 30% had higher education). Overall, the couples showed very high diary completion rates for the dyadic variables companionship, affect, and relationship satisfaction ($n = 2771$ [87.5%] of 99 couples $\times$ 32 days = 3168 possible observations); smokers also showed very high diary completion rates for smoking ($n = 2895$ [91.4%]).

Procedure

Participating couples were invited to the lab after they provided written informed consent and completed an online questionnaire. Across 32 consecutive days around the self-set quit date of smoking participants, couples reported on daily experiences in end-of-day diaries using smartphones provided to them. Couples were instructed to fill in the daily survey each night within 1 h of going to bed, separately from each other, starting 10 days before the quit date and for 21 days afterward. They were asked not to discuss their answers with their partners. A member of the research team downloaded the diary data every third day and contacted participants who missed entries by phone to check if there were any technical problems and encourage them to fill out the diary every day. One month after the self-set quit date of the smoking partner, couples returned to the laboratory for a follow-up; they also filled out further questionnaires. Couples received up to 100 Swiss Francs (approximately 107 USD) as compensation for completing the diary phase and the follow-up.

Measures

For 32 consecutive days, both partners of smoker–nonsmoker couples reported about their daily experiences in end-of-day diaries. All items were administered in German; the following item examples have been translated into English. Table 1 gives an overview of descriptive statistics of the variables of interest. The end-of-day diaries contained two *daily companionship* items "Today my partner and I had a good time" and "Today my partner and I laughed together often," adapted from the Network of Relationships Inventory (NRI; Furman & Buhrmester, 1985), with a response format of 1 (today definitively not true) to 6 (today completely true). *Daily positive and negative affect* was assessed using the short form of the

Positive and Negative Affect Schedule (Thompson, 2007). Both scales contained five items each. Partners were asked to rate their mood during the day, such as "Today I feel excited" for positive affect and "Today I feel distressed" for negative affect on a scale ranging from 1 "today definitely not true" to 6 "today completely true." *Daily relationship satisfaction* was assessed with the item "How have you experienced your relationship today?" adapted from the Dyadic Adjustment Scale (DAS; Dinkel & Balck, 2006) with a response format of 1 (today awful) to 7 (today wonderful). *Daily number of cigarettes smoked* was assessed from smokers by the item "Did you smoke today (including only one puff)?" with the response format of no (0) and yes (1), and if yes, "How many cigarettes did you smoke today?" If participants had not smoked, the number of cigarettes smoked was coded as 0. Participants' reports of smoking abstinence were biochemically verified with a carbon monoxide test of expelled air in Studies 2 and 3 (West et al., 2005): All participants reporting continuous abstinence 1 month after the quit date were detected as nonsmokers by the objective point-prevalence measure in both studies.

Data analysis

The same analysis approach as in Study 1 was used in Study 2. Instead of computing partner differences as female minus male, as in Study 1, we used smoking status as the distinguishing variable and calculated differences as smoker minus nonsmoker. A key covariate was a binary indicator of quit period (0 = the 10 days before the quit date, 1 = quit date on Day 11 and following days). The smoking outcome (health behavior) was defined only for the smoking partner in the smoker–nonsmoker couples. Because the outcome was cigarette count, we used a Poisson model to relate log smoking rate to time, quit period, and the four dyadic companionship variables using a generalized estimating equation with AR(1) structure and robust sandwich estimator accounting for overdispersion (Fitzmaurice et al., 2012).

Results

Companionship was highly correlated between smoking and nonsmoking partners both on the couple level ($r = .56$) and the daily level ($r = .59$), indicating considerable shared variance in the predictor companionship and thus underscoring the need for modeling the dyadic levels and processes. We found considerable variability and satisfactory reliabilities for couple means and differences at the between-couple level as well as for within-couple fluctuations in companionship and all four outcomes of interest, negative and positive affect, relationship satisfaction, and health behavior (see Table 1).

Table 2 shows all fixed effects of the multilevel models for Study 2 (for complete statistical results, please see Table S2).

Hypothesis 1. Couples' affect and relationship satisfaction

We found evidence in two of three outcomes in line with Hypothesis 1: At the between-couple level, couples with higher mean levels of companionship showed lower negative affect ($b = -0.18$, $p < .05$) and higher relationship satisfaction ($b = 1.09$, $p < .05$) and a smaller nonsignificant effect in the expected direction for positive affect ($b = 0.14$, *ns*).

Hypothesis 2. Daily affect and relationship satisfaction

We found consistent evidence at the daily level across all three outcomes in line with Hypothesis 2: On days when couples reported higher companionship levels, they showed lower negative affect ($b = -0.17$, $p < .05$) as well as higher positive affect ($b = 0.21$, $p < .05$) and relationship satisfaction ($b = 0.79$, $p < .05$).

Hypothesis 3. Differences in companionship—between-couple and daily levels

In line with Hypothesis 3, we found evidence in five of six effects that differences in companionship between the two partners predicted differences in outcomes. Couples with larger partner differences in companionship showed larger partner differences in outcomes. In couples in which the smoker reported higher average companionship than the nonsmoking partner across the study period, the smoker also reported higher average positive affect ($b = 0.69$, $p < .05$) and relationship satisfaction ($b = 1.01$, $p < .05$) than the nonsmoking partner. There was also a smaller nonsignificant effect in the same direction linking between-couple partner differences in companionship to lower negative affect ($b = -0.19$, ns). On days when the smoker reported higher companionship than their partner, they also reported lower negative affect ($b = -0.14$, $p < .05$) and higher positive affect ($b = 0.20$, $p < .05$) and relationship satisfaction ($b = 0.58$, $p < .05$) than their partner.

Hypothesis 4. Companionship and smoking

In line with Hypothesis 4a, we found that smokers with higher partner averages in companionship smoked less on average ($RR = 0.70$, $p < .05$). We found no evidence that smokers smoked less on days with higher partner averages in companionship ($RR = 0.99$, ns). For details of these effects, please also see the two left panels in Figure 3. We found no evidence that differences between partners in companionship were related to partner differences in smoking, neither at the between-couple level nor at the daily level ($RR = 1.12$, ns and $RR = 1.01$, ns).

To summarize, the results of Study 2 were largely in line with our hypotheses that companionship is related to higher emotional well-being and relationship satisfaction in smoker–nonsmoker couples (see Figure 2) and partially in line for health behavior; smokers smoked less with higher levels in companionship with their nonsmoking partner (see Figure 3).

STUDY 3: DAILY COMPANIONSHIP IN DUAL-SMOKER COUPLES

Methods

Design

Study 3 again examined the link between daily companionship, positive and negative affect, relationship satisfaction, and health behavior in the context of smoking cessation but this time in dual-smoker couples ($N = 83$ mixed-gender couples). For details about Study 3, please see Lüscher and Scholz (2017) and Lüscher et al. (2017). Study 3 was part of a larger project (individual regulation and dyadic exchanges during an ongoing quit attempt in dual-smoker
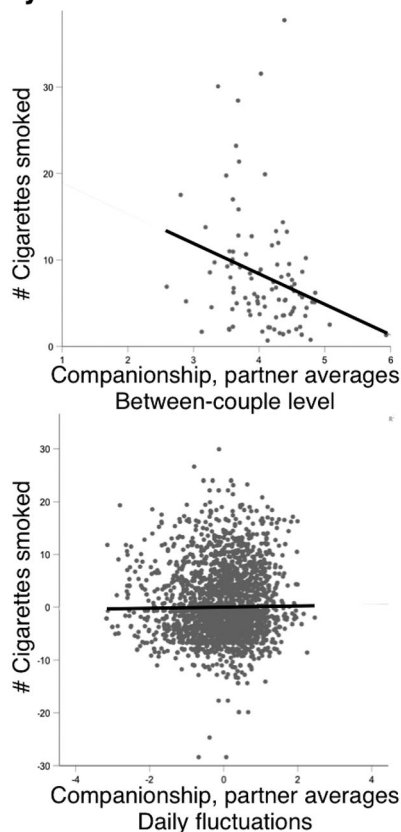
FIGURE 3 Differential effects of companionship on health behavior depending on partner behavior in Studies 2 and 3. *Note*: Smokers with a nonsmoking partner smoked less with higher levels of companionship (left upper panel), whereas daily fluctuations in companionship were unrelated to smoking in these couples (lower left panel). In couples where both partners smoked, companionship levels were not significantly related to smoking on the between-couple level (upper right panel), whereas they smoked more on days with higher companionship (lower right panel).

couples) funded by the Swiss National Science Foundation (PP00P1_133632/1; data collected 2012–2014). Approval was granted by the Ethics Committee of the University of Bern's Faculty of Human Sciences in Switzerland (2011-11-14409). Study 3 had the same dyadic intensive longitudinal design as Study 2, again no psychological intervention was provided. Additional inclusion criteria were couples with both partners being regular smokers as per the definition of the World Health Organization (WHO, 1998) and both agreeing on a joint self-set quit date within the study period.

Participants

A total of 85 mixed-gender dual-smoker couples participated in the baseline assessment. Two couples dropped out before their joint self-set quit date. As these two couples were not part of the study's population of quitters, we included data from 83 dual-smoker couples in the analyses. Of

the remaining 83 couples, 45% were married and 28% had children. Participants' age varied widely (women: $M = 38.50$, $SD = 14.64$, $range = 19–68$ years; men: $M = 40.70$, $SD = 14.51$, $range = 20–71$ years). Participating couples were from the German-speaking part of Switzerland, and most participants were currently employed (women: 61%, men: 72%) and reported having attended 9 years of school (women: 64%, men: 77%). Overall, the couples showed high diary completion rates ($n = 2313$ [87%] of 83 couples $\times$ 32 days $= 2656$ possible observations).

Procedure

Study 3 followed the same procedure as Study 2, only with a joint self-set quit date for the dual-smoker couples. As in Study 2, dual-smoker couples completed biochemical verification of smoking status with a carbon monoxide test of exhaled air (West et al., 2005) 1 month after the joint self-set quit date.

Measures

For 32 consecutive days, both partners of dual-smoker couples reported their daily experiences in end-of-day diaries. All measures for companionship, affect, relationship satisfaction, and smoking were identical to the ones used in Study 2, and the items were administered in German.

Data analysis

We used the same analysis approach in Study 3 as in Study 1 for all outcomes. Partner differences in Study 3, like in Study 1, were calculated as female partner's reports minus male partner's reports.

Results

Companionship was highly correlated between male and female smokers both on the couple level ($r = .54$) and the daily level ($r = .54$), indicating considerable shared variance in the predictor companionship and thus underscoring the need for modeling the dyadic levels and processes. Table 1 gives an overview of descriptive statistics and reliabilities of the variables of interest for Study 3, showing considerable variability and satisfactory reliabilities for partner averages and partner differences at the between-couple level as well as for daily fluctuations in companionship and negative and positive affect.

Table 2 shows all fixed effects of the multilevel models of Study 3 (for complete statistical results, please see Table S3).

    Hypothesis 1. Couples' affect and relationship satisfaction

We found evidence in two of three outcomes in line with Hypothesis 1: At the between-couple level, couples with higher mean levels of companionship showed lower negative affect

$(b = -0.35, p < .05)$ and higher relationship satisfaction $(b = 0.38, p < .05)$ and a smaller non-significant effect in the expected direction for positive affect $(b = 0.16, ns)$.

Hypothesis 2. Daily affect and relationship satisfaction

We found consistent evidence at the daily level across all three outcomes in line with Hypothesis 2: On days when couples reported higher companionship levels, they showed lower negative affect $(b = -0.19, p < .05)$ as well as higher positive affect $(b = 0.20, p < .05)$ and relationship satisfaction $(b = 0.33, p < .05)$.

Hypothesis 3. Differences in companionship—between-couple and daily levels

In line with Hypothesis 3, we found evidence in five of six effects that differences in companionship between the two partners predicted differences in outcomes. Couples with larger partner differences in companionship showed larger partner differences in outcomes. In couples in which the female smoker reported higher average companionship than the male smoker across the study period, the female smoker also reported higher average positive affect $(b = 0.75, p < .05)$ and relationship satisfaction $(b = 0.31, p < .05)$ than the male smoker. There was also a smaller nonsignificant effect in the same direction linking between-couple differences in companionship to lower negative affect $(b = -0.22, ns)$. On days when the female partner reported higher companionship than the male partner, the female partner also reported lower negative affect $(b = -0.11, p < .05)$ and higher positive affect $(b = 0.17, p < .05)$ and relationship satisfaction $(b = 0.22, p < .05)$ than their male partner.

Hypothesis 4. Companionship and smoking

In line with Hypothesis 4b, we found that smokers smoked more on days with higher companionship $(b = 0.18, p < .05)$, whereas we found a nonsignificant effect in the expected direction at the between-couple level $(b = 0.73, ns)$. We found no evidence that differences between partners in companionship were related to partner differences in smoking, neither at the between-couple level $(b = -0.13, ns)$ nor at the daily level $(b = -0.04, ns)$. For details of these effects, please also see the two right panels in Figure 3.

To summarize Hypothesis 4, companionship is relevant for health behavior: In dual-smoker couples (Study 3), companionship was related to smoking more on the daily level, whereas it was associated with less smoking in smokers with a nonsmoking partner (Study 2), with the latter possibly exerting a constant positive influence (see Figure 3).

DISCUSSION

In the current study, we found that companionship fluctuates from day to day around each couple's average level. These daily fluctuations as well as between-couple levels in companionship were meaningfully related to affect, relationship satisfaction, and health behavior. We will discuss the findings for affect and relationship satisfaction first and then turn to our findings for smoking.

Hypothesis 1. Did couples with higher companionship across the study period show higher affect and relationship satisfaction?

Overall, companionship was associated with better affect and higher relationship satisfaction across the three studies. In line with Hypothesis 1, Studies 1, 2, and 3 replicated prior findings linking companionship to higher emotional well-being and relationship satisfaction (Aron et al., 2000, 2013; Rook, 1987, 2015). Couples with higher levels of companionship showed less negative affect in Studies 2 and 3. Couples with higher levels of companionship showed higher positive affect in Study 1, whereas the effects in Studies 2 and 3 were smaller and nonsignificant yet in the same direction. This finding is consistent with a study showing that the companionship of a significant other was related to stronger positive affect, which reduced motivation to make new friends after moving to a new location; negative affect was unrelated (Li et al., 2022). Similarly, another study found that higher positive affect was associated with companionship, but negative affect had a more attenuated effect (Davidson et al., 2022). Companionship seems thus to show stronger links with positive affect than with negative affect across studies. Couples with higher companionship showed higher relationship satisfaction across all three studies. It seems promising to integrate companionship into theories of relational well-being, as others have already suggested (Aron et al., 2000, 2013; Rook, 1987, 2015).

However, the expected benefits for affect and relationship satisfaction were not consistently replicated across all tests and studies. Couples with higher levels of companionship showed less negative affect in Studies 2 and 3 but not in Study 1's community couples with somewhat lower means and variability in negative affect. In Studies 2 and 3, this may suggest a stronger effect of companionship on positive affect with a stressor such as smoking cessation. Negative affect may be more important in maintaining substance use than positive affect (Shrier et al., 2014).

> **Hypothesis 2.** On days with higher companionship than usual, did couples show higher affect and relationship satisfaction?

In line with Hypothesis 2, we found consistent evidence across three outcomes in all three studies that on days on which couples had higher companionship means, they showed lower negative affect and higher positive affect and relationship satisfaction. These findings extend evidence from prior studies to a more fine-grained temporal grid. These findings at the daily level speak for a fast onset of companionship effects within the same day, thus making companionship a promising candidate strategy to add to interventions to improve affective and relational well-being.

> **Hypothesis 3.** Were partner differences in companionship related to differences in affect and relationship satisfaction on the between-couple level and the daily level?

In line with Hypothesis 3, we found evidence in 15 of 18 effects that differences in companionship between the two partners at the between-couple level and the daily level predicted differences in outcomes. In couples where one partner reported higher companionship than the other partner across the study period, the partner with higher companionship levels showed higher positive affect and relationship satisfaction than the other partner. On days when one partner reported higher companionship than the other partner, they also reported lower negative affect and higher positive affect and relationship satisfaction than the other partner. However, in none of the three studies were differences in companionship at the between-couple level related to differences in negative affect between partners, possibly because of the low

overall level of differences in negative affect. Similarly, Davidson et al. (2021) found that the effect of negative affect changed depending on the level of negative affect and noted that more extreme negative affect was very rare in their study. Across the three studies, we found that partner differences in companionship are meaningful and predictive of partner differences in affect and relationship satisfaction, providing evidence that studying partner differences is worthwhile and should be included in future studies of dyads.

Hypothesis 4. Was companionship related to smoking?

Companionship showed differential effects for health behavior, with some support for Hypotheses 4a and 4b. Smokers with nonsmoking partners in Study 2 smoked less with higher companionship levels in line with Hypothesis 4a; daily fluctuations in companionship were unrelated to smoking contrary to Hypothesis 4a. On days with higher companionship than usual, smokers in dual-smoker couples in Study 3 smoked more, as proposed in Hypothesis 4b. These findings are in line with our argument that the presence of less smoking cues during companionate time with a nonsmoking partner would be related to less smoking, whereas companionate time with a smoking partner may deliver smoking cues, increasing the likelihood of more smoking (Conklin et al., 2008). In line with this finding, symptom system fit theory proposes that couples may choose to engage in unhealthy behaviors together because it has immediate positive consequences for the relationship such as enhancing closeness (Pauly et al., 2023; Rohrbaugh et al., 2002; Shoham et al., 2007) Furthermore, smoking is a way that dual-smoker couples manage stress and emotions (Rohrbaugh et al., 2002; Shoham et al., 2007). Smoking together may provide a context for positive partner interactions and a sense of unity.

Smokers in dual-smoker couples in Study 3 did not show a link between overall companionship levels across the study period and smoking, contrary to Hypothesis 4b. Across both studies, differences in companionship between partners were unrelated to smoking at the between-couple and daily level. This may represent yet another factor related to dual-smoker quit attempts that is not correlated within couples (motivation to quit: Ranby et al. (2013); quit beliefs and behaviors: Berli et al. (2018); quit self-efficacy: Haskins et al. (2021)).

Clearly, couple constellation matters when investigating the role of companionship for health behavior within a dyadic context. Companionship facilitates health behavior change when the behavior of both partners is in line with the behavioral goal. Contrarily, when couples engage in unhealthy behaviors together, companionship can act as a double-edged sword, increasing positive affect but also making the pursuit of the behavioral goal harder to achieve on a daily level. Our findings represent initial evidence linking companionship and smoking behavior; however, more work is needed to understand how companionship relates to health behavior over time in different couple constellations.

Companionship as a case study for using a DSM

The DSM allowed us a more in-depth exploration of intensive longitudinal data in couples and is suitable for predictors where the shared variance between partners is of interest, such as epitomized by companionship. This model has some advantages compared with classic approaches (e.g. a longitudinal actor-partner interdependence model that emphasizes individual partners' contribution to predictor and outcome), including a conceptual focus on the couple, tests for effects of partner differences in a dyadic predictor, and a direct test of partner

differences in outcome. To illustrate the use of the DSM compared with an actor–partner interdependence model (APIM; Kenny et al., 2006), we conducted additional analyses using the example of companionship and positive affect with data from Study 1 (see Table S1a for a direct comparison). These analyses highlight a fourth interesting property of the DSM: It shows higher precision for detecting the effects of partner averages in dyadic predictors. For example, in the DSM, couples with higher partner averages for companionship at the between-couple level showed higher positive affect with a tighter standard error than the individual partner's actor effects in the APIM. Because partner averages draw on more degrees of freedom by pooling both partner's data, the higher precision for partner effects is a systematic feature of DSMs. Therefore, relationship researchers interested in constructs where partner averages and partner differences are meaningful can use a DSM to better understand their daily and couple-level effects.

Limitations

Regarding limitations, the associations of daily fluctuations in our three intensive longitudinal studies do not allow causal interpretation of the effects. Future research should include interventions to increase companionship to test its immediate and longer-term causal effects, as promising prior lab and field experiments found that companionship can be increased (c.f., Aron et al., 2000; Coulter & Malouff, 2013; Graham, 2008; Muise et al., 2019; Reissmann et al., 1993). In addition, longer-term studies of companionate relationships and their impact on morbidity and mortality would offer external and ecological validity that shorter-term and lab-based studies cannot offer. A second limitation of our studies is the necessary brevity of measures in daily diaries, which allowed only limited nuance, particularly for assessing companionship and relationship satisfaction. Future non-intensive longitudinal designs could implement more sophisticated measures of these constructs. Another limitation is the positive connotation between companionship (as two partners agree and differ on their shared experience) and positive affect (for which each partner reports their affect individually). As companionship and positive affect are subjective experiences, we have taken additional steps to separate these constructs on the assessment side. Therefore, companionship was grounded in specific interactions, and positive affect was measured more generally. Moreover, the word "pleasant" was purposefully not part of the positive affect scale to avoid item wording overlap. Additionally, we also included negative affect for which there is no direct conceptual overlap with companionship. Given that positive and negative affect are conceptualized as being independent dimensions of affect, it is not a logical, but an empirical result that we find a negative association between companionship and negative affect. This result also adds to our knowledge on the effects of companionship over and above the expected positive association with positive affect. Last but not least, the smokers and partners in Studies 2 and 3 were a motivated sample; indicated by their high diary completion rates, smokers showed high initial smoking rates and were observed during a quit attempt, which is a heightened stress state, possibly limiting the generalizability of the findings. Therefore, further observational research is needed to capture the links between companionship, smoking, and other outcomes in smokers of varying motivation, dependence levels, and during and outside of stress periods. However, Study 1 with community couples showed similar findings, increasing the likelihood that results concerning emotional well-being and relationship satisfaction will generalize to other populations.

Conclusion

To summarize, the results across the three studies were largely in line with our hypotheses that higher companionship is related to better affect and relationship satisfaction. For health behavior, effects seem to depend on the couple constellation: Whereas smokers with nonsmoking partners smoked less on average with higher companionship, smokers with smoking partners smoked more on days with higher companionship. This study expands the positive findings in the prior literature to daily fluctuations and couple differences. Partners show shared levels and differ meaningfully from each other in predictors and outcomes and these nuances matter; in this article, we presented a way to address couple data in daily life in a more comprehensive way. Companionship is a construct deserving further research, for its role for well-being and relationship satisfaction in close relationships, as well as its differential effects on health behavior, depending on partner behavior.

CONFLICT OF INTEREST STATEMENT
The authors declared that they had no conflict of interest with respect to their authorship or the publication of this article.

DATA AVAILABILITY STATEMENT
The data that support the findings of this study are available from the corresponding authors upon reasonable request. An example code for Study 1 can be found in Table S1b.

ETHICS STATEMENT
All participants attended voluntarily, signed an informed consent, and were treated in accordance with the standards of the Declaration of Helsinki (World Medical Association, 2001). Study 1 was approved by the local ethics review board and was granted for the study (IRB-AAAC0303). Study 3 was approved by the Ethics Committee of the University of Bern's Faculty of Human Sciences in Switzerland (2011-11-14409).

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