



Interpersonal Emotion Regulation: an Experience Sampling Study

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Abstract

People often turn to others for help with regulating their emotions, a process known as interpersonal emotion regulation (IER). Emerging research has begun to document the importance of IER in well-being. However, the basic elements of IER in daily life are still not clearly understood. We aimed to better understand the characteristics of adults' everyday IER. In this 2-week experience sampling study (five surveys daily), 87 adults (mean age = 45.5 years) reported on whether, from whom (i.e., sharing partner role type and gender), and why (i.e., IER goals) they sought IER. They also indicated which IER strategies their sharing partners used, including putatively supportive (i.e., reappraisal, problem solving, affection, encouraging sharing) and unsupportive (i.e., invalidation, blaming) strategies. Results showed that most people engaged in IER. Using multilevel modeling, we found that people tended to seek IER from close versus non-close others and were more likely to seek emotion-oriented (e.g., empathy) relative to problem-oriented goals (e.g., advice). Sharing partners were more likely to provide (a) supportive than unsupportive strategies, with reappraisal, problem solving, and affection being most frequently endorsed, and (b) problem-oriented supportive strategies (e.g., problem solving) than emotion-oriented supportive strategies (e.g., affection). We also explored gender and age differences in IER. This research contributes to the broader emotion regulation literature by elucidating everyday IER behaviors in adults. Findings highlight the ubiquity of IER as well as people's tendencies when seeking and providing IER.

Keywords Emotion regulation · Interpersonal emotion regulation · Social sharing of emotion · Social relationships · Experience sampling

People engage in emotion regulation (ER) in various ways (Heiy & Cheavens, 2014), including recruiting social resources, a phenomenon known as *interpersonal emotion regulation* (IER; e.g., Dixon-Gordon et al., 2015; Zaki & Williams, 2013). IER is a goal-directed process of shaping one's own or another's emotional trajectory through social interactions (Zaki & Williams, 2013). Although overlapping with other related processes, including social sharing of emotion (Rimé, 2009) and support seeking/provision (Cohen & Wills, 1985), IER is distinct because it is driven by a goal to shape someone's affect (Zaki & Williams, 2013), which is

sometimes pursued to achieve other goals (e.g., strengthen relationships; Tamir, 2016). In the present study, we aim to better understand people's everyday IER, including how often, from whom, and why people seek IER, as well as how others respond. We focus on IER in negative situations because people regulate emotion more frequently and effortfully in negative than positive situations (English et al., 2017). Further, sharing negative emotional experiences with others often serves as attempts to initiate IER.

Elucidating IER is critical. IER is associated with better emotional and social well-being (Williams et al., 2018), and it is essential to human bonding. Close relationships are developed and maintained through sharing emotional experiences and providing ER support during difficult times (Graham et al., 2008; Reis & Patrick, 1996). Engaging in IER to improve others' affect predicted increased quality of social relationships over time (Niven et al., 2012).

Research has not examined basic features of IER, such as how frequently and with whom (i.e., sharing partner type, sharing partner gender, diversity of sharing partner network)

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people engage in IER. These elements represent integral parts of IER and may have implications for well-being. For example, seeking IER frequently with a diverse network of sharing partners may help build one's ER repertoire. Seeking IER too infrequently or too frequently or relying on a single source for IER may be maladaptive. Related research on social sharing of emotion finds that most emotional events people experience are subsequently shared with others, and adults share emotions more frequently with close others (e.g., romantic partners) than with non-close others (e.g., co-workers; Rimé, 2009). These findings have largely relied on participants' autobiographic memory, which is impacted by personal beliefs (Robinson & Clore, 2002) and recall bias (Stone et al., 1998), so examining these constructs naturalistically is important.

IER is a goal-directed process that unfolds in social contexts (Zaki & Williams, 2013), so it is vital to understand what motivates people to pursue IER (i.e., IER goals) and how sharing partners respond (i.e., IER strategy). When facing negative situations, people can have *problem-oriented goals* (i.e., seeking cognitive clarity and help with the problem) and *emotion-oriented goals* (i.e., seeking emotional comfort and validation; Rimé, 2009). IER goals could influence how the sharer discloses the experience and how the sharing partner responds. Sharing partner's response may improve (*putatively supportive*) or worsen (*putatively unsupportive*) how the sharer feels, in line with research making similar distinctions, such as pro-hedonic versus contra-hedonic ER (Gross, 2015) and affect-improving versus affect-worsening IER (Niven et al., 2009). IER strategies can also be distinguished by whether they target how the sharer perceives and handles the problem (*problem-oriented*) versus the sharer's emotional reaction (*emotion-oriented*). This categorization is consistent with distinctions of IER strategies (Niven et al., 2009), listener responses (Nils & Rimé, 2012), support provision (Horowitz et al., 2001), and coping (Folkman & Lazarus, 1980). It also allows us to examine whether the strategies *match* the sharer's goals, which characterizes the IER interaction at a meta-level based on the fitness of individual elements of IER.

In this experience sampling (ESM) study, we recruited an adult sample from the community who did not meet criteria for psychiatric disorders. Focusing on psychologically healthy adults will help establish a reference for IER that is not confounded by psychopathology, which is often characterized by emotion dysregulation (e.g., major depressive disorder; Liu & Thompson, 2017). We examine how frequently and with whom people share negative emotional experiences in their daily lives. Based on the social sharing of emotion literature (Rimé, 2009), we hypothesize that almost everyone will share negative emotional experiences (Hypothesis 1), and people are more likely to share negative emotional experiences with close (vs. non-close) others (Hypothesis 2a). Given that traditional gender stereotypes associate women (vs. men) with communal traits (e.g., warm, caring; Abele, 2003), we expect

that people are more likely to share with women than men (Hypothesis 2b). We also examine what IER goals people tend to seek, predicting that people are more likely to seek emotion-oriented relative to problem-oriented goals (Hypothesis 3). We assess how sharing partners respond, hypothesizing that they are more likely to provide (a) supportive than unsupportive strategies (Hypothesis 4a) and (b) problem-oriented than emotion-oriented supportive strategies (Hypothesis 4b); we also explore how often these strategies match the sharer's goals. Hypotheses 3, 4a, and 4b were based on clinical experience and anecdotal evidence that people want to "fix" the problem out of a desire to help even though the sharer often prefers to be heard and understood. Consistent with this, college students were more likely to provide agentic (e.g., advice) versus communal support (e.g., empathy; Horowitz et al., 2001). We also explore a novel way to holistically assess with whom one engages in IER by examining how the diversity of sharing partner network is associated with other IER variables.

Finally, we explore how IER differs by gender and age. Based on evidence that women are more likely to seek support than men (Tamres et al., 2002) and traditional gender stereotypes (Abele, 2003), we expect that women will share (a) more frequently and (b) with a more diverse sharing partner network than men. We also explore whether *sharing partners* provide different IER strategies based on the *sharing partner's* gender. With increasing age, we hypothesize that people will share negative emotional experiences (a) less frequently, (b) with a less diverse sharing partner network, and (c) more exclusively with close (vs. non-close) others; in addition, we expect that (d) age will be positively associated with seeking emotion-oriented goals relative to problem-oriented goals. These age hypotheses are largely based on the socioemotional selectivity theory, which posits that as people age, they seek more positive situations, increasingly prioritize emotional and social goals over knowledge-related goals, and become more selective of their social network (Carstensen et al., 1999).

Methods

Participants

Eighty-seven participants (50 women, 37 men) were recruited from the greater St. Louis region to participate in a large project on everyday emotion and decision-making. Participants were recruited through participant registries, advertisements posted online (e.g., Craigslist), and local clinics and businesses. Participants were between 18 and 77 years of age ($M = 45.5$, $SD = 16.9$) as we carefully recruited our sample so that each 10-year age range had a similar number of participants. Participants had a racial/ethnic distribution as follows: 66.7% White, 19.5% Black, 8.0% multi-racial, 4.6% Asian,

and 1.1% Native American or Alaskan Native. Most participants had earned a bachelor's degree or higher (65.5%). Among the 81 participants who reported relationship status, 60 (74.1%) participants indicated being in a romantic relationship. Out of these 60 participants, 56 (34 women, 22 men) had an opposite-gender partner, two (both were men) had a same-gender partner, and two (both were men) did not specify their partners' gender.

For all participants, eligibility criteria included speaking English as a primary language and having no severe visual or hearing impairments. In addition, participants for the present study represent a psychologically healthy sample. Eligibility for this sample required not meeting criteria for any current or past mood disorders, anxiety disorders, or psychotic symptoms as defined by the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychiatric Association, 2013). Not included in the sample of 87 participants were eight participants who withdrew ($n = 4$), experienced technical problems ($n = 1$), were non-compliant with the study protocol (i.e., completed less than 20% of the surveys during the ESM portion; $n = 2$), or whose behavior evoked concern about the validity of the data ($n = 1$).

For the present study, the major analysis is multilevel logistic regression (see “Analytic Plan” section below). A prior simulation study suggests that, for multilevel logistic regression models, a minimum sample size of 50 at both the higher and the lower level is recommended for producing valid estimates (Moineddin et al., 2007). At the higher level, our sample is composed of 87 participants, which exceed 50 participants. At the lower level, the average number of surveys completed by participants is 52.2 (obtained by multiplying the total number of survey prompts, 70, by the average compliance rate, 74.6%), which also exceeds 50. Thus, our sample sizes at both levels meet the criteria of recommended sample sizes for two-level modeling (Moineddin et al., 2007).

Procedures

Interested individuals completed an initial telephone screen conducted by a post-baccalaureate project manager or an undergraduate research assistant. Likely eligible individuals were asked to complete an online survey (i.e., home survey) before attending an in-person laboratory session. During the laboratory session, participants completed informed consent, a series of self-report measures, and the Mood, Anxiety, and Psychotic Disorder Modules of the *Structured Clinical Interview for DSM-5* (SCID-5; First et al., 2014) to further assess eligibility. Interviews were conducted by clinical psychology graduate students, who had completed a course in which they learned to administer the SCID-5.

Ineligible participants were financially compensated. Eligible participants (i.e., the psychologically healthy sample for the present study) were invited to complete the rest of the

study, including another online survey and several cognitive tasks unrelated to the present investigation. Finally, participants underwent a 30-min interactive ESM tutorial, which consisted of an undergraduate research assistant providing instructions on how to complete individual surveys, presenting information via a PowerPoint-like presentation. Throughout the tutorial, the research assistant checked the participant's comprehension of items (e.g., asking participants to generate examples for items and providing standardized answers when necessary). Participants also completed a practice survey during the tutorial and chose their preferred 15-h period to receive surveys on their own iPhone or an iPod Touch 4 (Apple, Seattle, WA) that was provided to them. The ESM protocol was delivered through an iOS mobile application called Status/Post designed by Christopher Metts, M.D. We provided iPod Touch devices and used a mobile application that collected data offline to recruit a more diverse sample, including those without access to Wi-Fi. Finally, participants were financially compensated for completing the online survey and the laboratory session.

The ESM surveys began the day following the laboratory session. Each day during their 15-h surveying period, participants were prompted to complete surveys five times, with one occurring randomly within each of the five 3-h time windows, for a total of 70 surveys. Participants had 15 min to begin each survey and were presented with two reminder tones. Surveys occurred at an average of 3 hr 1 min apart ($SD = 1$ hr 1 min). A lab member contacted each participant 4 days into their ESM period to inquire about their experience with the surveys and solve any technical issues. To encourage compliance, participants were informed about their completion rates halfway through the ESM period. We collected a total of 3920 surveys from participants. Participants completed, on average, 74.6% of all surveys for the ESM portion ($SD = 19.4%$; range = 20%–98.6%). After the ESM period, participants were sent an email with a written debriefing and financially compensated for their time (\$40) with a bonus of \$10 for completing at least 80% of surveys. The research protocol was approved by a university institutional review board.

ESM Measures

Negative Emotional Experience Sharing

To assess the occurrence of sharing negative emotional experiences, participants responded (“yes” or “no”) to the following question at each prompt: “Since the last beep, have you shared any negative experiences or feelings with anyone?” At the ESM tutorial, participants were instructed to report situations where they shared information in person or over the phone (e.g., call, text). They were also instructed not to report situations during which it was unclear whether the sharing partner received the message (e.g., shared via text but did

not receive a response). They could only report interactions with a specific person; that is, they did not report situations during which they shared information with a group of people (e.g., posting on social media). If there was more than one instance of sharing since the previous survey, participants were instructed to report on the interaction that was the most important to them. If they answered “yes” to the negative emotional experience sharing item, they were asked a series of questions described below. If participants answered “no,” they were not asked additional questions about IER. To index frequency of sharing, for each participant, we calculated an aggregated percentage variable by dividing the number of times the participant answered “yes” to this question by the total number of times the participant responded (either “yes” or “no”) to this question over the 2-week period, which is reported in Table 1.

Of the full sample ($N = 87$), 74 participants (hereafter *sharers*) reported having shared negative emotional experiences with someone at least once over the sampling period. The other 13 participants (hereafter *non-sharers*) did not report sharing any negative emotional experiences; as a result, we do not have their data on any additional IER measures that were contingent upon having endorsed negative emotional experience sharing. Consequently, for the negative emotional experience sharing variable, we conducted analyses on both the full sample and the sharers; for all other IER variables, we analyzed data only from the 74 sharers.

Sharing Partner Type

When participants reported having shared a negative emotional experience, they were asked a series of questions about the interaction. Participants reported their relationship with the sharing partner by responding to the question, “Who was the person you shared them with?” A checklist of the following options was presented: romantic partner, family member, friend, someone at work, acquaintance, and stranger. Participants could only choose one option. At the tutorial, participants were instructed that, if they knew the sharing partner in more than one capacity, they were to indicate the sharing partner’s primary role in their life. Given the infrequent endorsement of sharing with acquaintances and strangers, we combined these two types and labeled it “acquaintance/stranger” for data analyses, resulting in five types of sharing partners. To index how frequently participants shared negative emotional experiences with the five types of sharing partners, for each participant, we calculated an aggregated percentage for each type of sharing partner (e.g., romantic partner) by dividing the number of times they selected that particular type of sharing partner (e.g., romantic partner) by the total number of times they responded to this question. Thus, for each participant, five aggregated percentages were calculated corresponding to the five types of sharing partners.

We also divided these five types of sharing partners into close (i.e., romantic partner, family member, and friend) and non-close others (i.e., someone at work and acquaintance/stranger). Aggregated percentages for the five types of sharing partners and their breakdown as close and non-close others are presented in Table 1.

To index the diversity of participants’ sharing partner networks, we calculated a sharing partner diversity index for each participant by adopting the Shannon diversity index (Shannon, 1948). Popularly used in the ecological literature, the Shannon diversity index characterizes species richness (i.e., the total number of different types of species) and evenness (i.e., similarity in abundances of different species; Magurran, 2004). In the context of sharing partner diversity, the Shannon’s diversity index characterizes sharing partner richness (i.e., the total number of different types of sharing partners with whom participants reported sharing negative emotional experiences) and evenness (i.e., similarity in frequencies of sharing with different types of sharing partners). Specifically, we computed the sharing partner diversity using the formula:

$$\text{Sharing partner diversity} = - \sum_{i=0}^R (p_i \times \ln p_i)$$

where R is the total number of different types of sharing partners with whom a participant shared negative emotional experiences over the 2-week period (i.e., richness) and p_i is the proportion of times when the participant shared negative emotional experiences with the i th type of sharing partner. The sum of the $(p_i \times \ln p_i)$ products is multiplied by -1 so that higher numbers indicate greater diversity of sharing partners. Sharing partner diversity is the lowest when the participant shares negative emotional experiences with only one type of sharing partner ($R = 1, p_i = 1$), in which case $\ln p_i$ equals 0, and thus sharing partner diversity equals 0. Sharing partner diversity is the highest when the participant shares negative emotional experiences with all five sharing partners ($R = 5$) with equal frequencies ($p_i = 0.2$ for each sharing partner type), in which case $\ln p_i$ equals -1.61 for each type of sharing partner and thus sharing partner diversity equals 1.61. Thus, the possible range of sharing partner diversity is 0 to 1.61.

Sharing Partner Gender

Participants also reported their sharing partner’s gender by indicating “this person was”: male, female, or other. To index how frequently participants shared negative emotional experiences with sharing partners of different genders, we calculated an aggregated percentage for each sharing partner gender (e.g., female) by dividing the number of times they selected that particular sharing partner gender (e.g., female) by the total number of times they responded to this question. Thus, for

Table 1 Aggregated descriptive data of key interpersonal emotion regulation (IER) variables by participant gender

	Participants who reported IER at least once <i>M (SD)</i>	Women (<i>n</i> = 46) <i>M (SD)</i>	Men (<i>n</i> = 28) <i>M (SD)</i>
Negative emotional experience sharing ^a	14.9% (11.0)	16.1% (11.2)	12.9% (11.2)
Sharing partner type			
Romantic partner	28.1% (33.0)	25.8% (29.8)	31.9% (37.9)
Family member	25.2% (28.8)	26.3% (25.6)	23.3% (33.8)
Friend	28.6% (28.0)	28.0% (23.3)	29.6% (34.7)
Someone at work	11.5% (17.4)	12.0% (17.4)	10.6% (17.7)
Acquaintance/stranger	6.62% (14.8)	7.89% (16.8)	4.53% (10.6)
Sharing with close versus non-close sharing partner			
Close sharing partner	81.9% (22.4)	84.9% (23.5)	80.1% (20.6)
Non-close sharing partner	18.1% (22.4)	15.1% (23.5)	19.9% (20.6)
Sharing partner gender			
Women	55.2% (31.1)	47.6% (27.5)	67.7% (33.1)
Men	41.2% (32.3)	49.0% (29.5)	28.5% (33.2)
Other	3.58% (9.79)	3.41% (7.22)	3.87% (13.1)
Sharer's IER goals			
Problem-oriented only	31.6% (29.3)	32.5% (28.6)	30.2% (30.7)
Emotion-oriented only	55.8% (31.4)	57.0% (30.5)	53.8% (33.3)
Both	12.6% (21.4)	10.5% (20.4)	16.0% (22.9)
Sharing partner's IER strategies			
Reappraisal	26.5% (28.3)	21.6% (22.3)	34.5% (35.1)
Problem solving	26.9% (24.4)	29.1% (23.4)	23.4% (25.9)
Invalidation	10.4% (17.2)	11.4% (17.3)	8.87% (17.2)
Blaming	5.15% (9.90)	5.28% (9.52)	4.94% (10.7)
Encouraging sharing	16.0% (22.7)	15.6% (19.6)	16.6% (27.4)
Affection	25.5% (27.0)	25.8% (26.7)	25.0% (27.9)
None of these	21.2% (26.1)	23.6% (27.3)	17.4% (24.1)

^a Data reflect the 74 who shared negative emotional experiences at least once over the experience sampling period. Among the full sample of 87 participants, frequency of sharing was 14.9% (*SD* = 11.2%) for women and 9.78% (*SD* = 11.2%) for men. Close sharing partner = romantic partner, family member, and friend; non-close sharing partner = someone at work and acquaintance/stranger

each participant, three aggregated percentages were calculated corresponding to the three types of sharing partner genders. Because participants rarely endorsed “other” (see Table 1), we limited analyses to sharing partners who were female or male.

Sharer's IER Goals

Next, participants' IER goals were assessed by the question, “Why did you share your experiences or feelings with this person? To obtain:”. Participants were presented with a checklist of two options: to obtain advice, help, or information and to obtain empathy, care, or understanding. To obtain advice, help, or information represented problem-oriented goals, and to obtain empathy, care, or understanding represented emotion-oriented goals. Participants could select one or both types of goals. The wordings of these two goals were author-

designed based on definitions of problem-oriented and emotion-oriented goals. To index how frequently participants endorsed seeking different types of IER goals, we created three aggregated percentages for different combinations of goal endorsement: seeking problem-oriented goals only, seeking emotion-oriented goals only, and seeking both problem-oriented and emotion-oriented goals.

Sharing Partner's IER Strategies

We focus on six IER strategies that align with our theoretical classification of the IER strategies (see Table 2 for the strategies and their definitions). We classify cognitive reappraisal (hereafter reappraisal), problem solving, and problem blaming (hereafter blaming) as problem-oriented strategies because they are directly related to the disclosed problem.

Table 2 Grouping of interpersonal emotion regulation strategies

	Problem-oriented	Emotion-oriented
Putatively supportive	Cognitive reappraisal: offering a different interpretation or perspective of the sharer's problem Problem solving: providing a practical solution to the sharer's problem	Encouraging sharing: encouraging the sharer to share more how he or she feels Affection: expressing verbal (e.g., expressed love or care) and physical affection (e.g., hug)
Putatively unsupportive	Problem blaming: suggesting that the sharer has some responsibility for what happened	Emotion invalidation: suggesting the sharer's emotions are unwarranted

These three problem-oriented strategies are adopted from intrapersonal emotion regulation literature and correspond to the positive refocusing, refocus on planning, and self-blame subscales of the Cognitive Emotion Regulation Questionnaire, respectively (Garnefski et al., 2001). We classify the other three IER strategies—encouraging sharing, affection, and emotion invalidation (hereafter invalidation)—as emotion-oriented strategies because they concern the sharer's emotional reactions to the situation. They correspond to interest, affection, and invalidation behaviors, respectively, that are commonly studied in communication among romantic couples (Coan & Gottman, 2007). Further, this particular set of strategies also allowed us to assess both supportive (i.e., reappraisal, problem-solving, encouraging sharing, and affection) and unsupportive strategies (i.e., blaming and invalidation).

To assess which IER strategies the sharing partner employed, participants were asked the question, “How did this person respond to you? He/she... (Check all that apply.)” Participants were presented with the following six IER strategies in a random order at each prompt: interpreted the situation in a positive light (reappraisal), suggested solutions to the problem (problem solving), suggested that I contributed to the problem (blaming), encouraged me to share my feelings (encouraging sharing), showed love or affection (affection), suggested that I was overreacting (invalidation), and none of these. Participants could select one or more options. We conducted a small pilot study to inform which IER strategies people commonly receive when sharing negative emotional experiences. More specifically, we recruited ten romantic couples and interviewed each member of the dyad about the frequency and helpfulness of 13 IER strategies (i.e., reappraisal, distraction, expressive suppression, encouraging sharing, problem solving, blaming, acceptance, reassurance, reciprocal sharing, normalization, empathic paraphrasing, invalidation, and affection) their partner used when they shared negative emotional experiences with them. These 13 strategies were designed by the first and final author of the study based on emotion regulation literature (e.g., Garnefski et al., 2001; Gross, 2015) and affective behaviors in couples' interactions (Coan & Gottman, 2007). To reduce participant burden and encourage compliance, we selected six of the 13 IER strategies to include in the present study. The six selected strategies

were among the most commonly endorsed supportive and unsupportive strategies of the 13 strategies assessed in the pilot study. They align with our theoretical distinctions between supportive and unsupportive strategies and between problem-oriented and emotion-oriented strategies, which allows us to examine whether they match the sharer's IER goals in the same survey. The phrasing of these strategies took multiple factors into account: how similar concepts are defined in relevant literatures, how each strategy is conceptualized in the context of IER, and how to convey each strategy with the most concise wording to minimize participant burden.

Analytic Plan

We present descriptive findings using aggregated data for all ESM measures. Because of the multilevel nature of our data, we used multilevel modeling (MLM) to conduct analyses for the majority of our analyses. MLM is appropriate because it takes into account dependency within the data and simultaneously estimates within- and between-person effects while handling missing data and varying time intervals (Krull & MacKinnon, 2001; Nezlek, 2012; Snijders & Bosker, 2012). For our analyses, we structured our data such that the momentary measures (Level 1) were nested within participants (Level 2). However, we also conducted analyses testing whether we should structure the data in other ways (e.g., within days or time blocks). Based on further examination (i.e., computing intraclass correlation coefficients [ICC]), there was a general lack of dependency within time blocks, so we did not include time-block level in our models. However, we found that dependency existed within days (i.e., ICCs > .10) for three variables: close versus non-close sharing partner, sharing partner type, and sharer's IER goals. Thus, we repeated analyses including these three variables by adding days as a random effect (i.e., surveys within days within participants), finding that all significant results in analyses of close versus non-close sharing partner and sharer's IER goals were significant in these models as well. For sharing partner type, we found that the model including day level was too complex given the data (see [Online Resource](#), Sect. 1 for more details). Taken together, these findings suggest that day level can be omitted from the analyses.

Statistical Analyses

All analyses were conducted using R statistical software (v 4.0.2; R Core Team, 2017). We conducted multilevel logistic regression analyses using the lme4 package (Bates et al., 2015) and the glmer() function for models with binary outcome variables (i.e., negative emotional experience sharing [Hypothesis 1], sharing with close versus non-close sharing partner [Hypothesis 2a], sharing partner gender [Hypothesis 2b], supportive versus unsupportive IER strategy [Hypothesis 4a], emotion-oriented versus problem-oriented supportive IER strategy [Hypothesis 4b]). We dummy-coded close versus non-close sharing partner (0 = non-close other, 1 = close other; Hypothesis 2a) and sharing partner gender (0 = man, 1 = woman; Hypothesis 2b). For the six IER strategies, we created one binary dummy variable for each strategy to denote whether a particular strategy is endorsed (0 = not endorsed, 1 = endorsed) within each survey. We also created additional binary variables for IER strategies. Specifically, we created a binary variable to represent whether a strategy (or strategies) was unsupportive (0; blaming and/or invalidation) or supportive (1; reappraisal, problem solving, encouraging sharing, and/or affection) to examine participants' relative likelihoods of receiving supportive versus unsupportive strategies (Hypothesis 4a). This variable excluded instances when participants indicated both supportive and unsupportive strategies simultaneously (4.76% of the surveys), and when they indicated "none of these" only because we do not know what types of IER strategies were included in this category (22.6% of the surveys), which constituted a minority of the surveys. For surveys in which supportive IER strategies were reported (regardless of whether participants simultaneously reported "none of these"), we created a binary variable to represent whether the supportive strategy (or strategies) was problem-oriented (0; reappraisal and/or problem solving) or emotion-oriented (1; encouraging sharing and/or affection) to examine participants' relative likelihoods of receiving emotion-oriented versus problem-oriented supportive strategies (Hypothesis 4b). This variable excludes instances when participants indicated receiving both problem-oriented and emotion-oriented supportive strategies simultaneously because they could not be categorized as either problem-oriented or emotion-oriented (19.2% of the surveys in which supportive strategies were reported), which was also infrequent.

We took a Bayesian approach to multilevel multinomial logistic regression analyses where the Level 1 outcome variable was categorical and had more than two levels (i.e., sharing partner type and IER goals [Hypothesis 3]). For IER goals, we created a categorical variable with three levels (problem-oriented goals only, emotion-oriented goals only, and both) to denote the three combinations of participants' endorsement of different types of IER goals. We used the brms package

(Bürkner, 2017, 2018) and the brm() function, which derives samples using a Markov Chain Monte Carlo (MCMC) algorithm (Zhao et al., 2006). Four chains were used, with each chain containing 20,000 iterations, 2,000 of which are warm-up runs, and a thinning interval of 20 for sharing partner type or 10 for IER goals, resulting in a total of 3,600 samples for sharing partner type or 7,200 samples for IER goals to generate posterior distributions of the model parameters. The modes of these distributions are the model fixed effects and the dispersion in the distributions is used to estimate 95% credible intervals. Model building in this framework used the same strategy as outlined for standard mixed models of other outcomes. An unconditional model was estimated first to examine the relative probabilities of different levels of the categorical outcome variable. Of note, we used the brms (Bayesian) package because it is the most comprehensive R solution for the multilevel multinomial logistic regression model and its use mimics the glmer() function from the lme4 package, which we used for the binomial logistic regression models. We replicated all non-Bayesian binomial logistic regression analyses using the brms package, and all results remain the same.

When exploring gender and age effects on Level 1 variables, we used participant gender or age (Level 2) to predict the IER variable (Level 1). We created a Level 2 binary dummy variable to index participant gender (0 = man; 1 = woman) as these were the only two gender types reported by participants. We z-scored participant age and explored both linear and quadratic age associations with IER measures. When examining gender and age differences in Level 2 variable (i.e., diversity of sharing partner network), we conducted linear regression analyses using participant gender and age as predictors; MLM was not needed in this case. Notably, we always included gender, linear age, and quadratic age variables simultaneously in the model. Because of this, when graphing age effects, we present separate graphs for women and men participants. To help readers visualize age effects across gender, we also plot age effects for the full sample by running the same analyses but excluding the participant gender variable from the model.

Results

Main Analyses of Key IER Variables

Negative Emotional Experience Sharing

On average, across the full sample ($N = 87$), participants reported sharing negative emotional experiences 12.7% of the time, meaning that, on average, they reported sharing 6.56 times over the 2 weeks (i.e., roughly every other day). Examining frequency of sharing at the day level, participants

reported sharing on 34.8% of the days ($SD = 25.5\%$, range = 0–92.9%). Supporting Hypothesis 1, most (i.e., 74 out of 87) participants reported sharing at least once over the 2 weeks. The 74 sharers reported sharing an average of 14.9% of the time, meaning that they, on average, reported sharing 7.90 times over the 2 weeks.

We compared the 74 sharers with the 13 non-sharers on survey completion rates and demographic characteristics. Critically, they did not significantly differ in overall compliance (i.e., percent of surveys completed during ESM), Welch's $t(17.2) = 1.61$, $p = .13$, suggesting that the 13 participants never reported sharing negative emotional experiences not because they completed fewer surveys and had fewer opportunities to report sharing negative emotional experiences. This is further supported by the finding that frequency of sharing was not correlated with compliance among the full sample, $r = -.04$, $p = .69$, or among the sharers only, $r = -.17$, $p = .15$. The two groups did not significantly differ in age, Welch's $t(17.2) = 0.98$, $p = .34$, race/ethnicity (i.e., limited to White and Black due to small numbers of people in other racial/ethnic group; $p = .44$, Fisher's exact test [FET]), education (i.e., whether they had obtained a bachelor's degree; $p = .53$, FET), or relationship status (i.e., whether they were in a romantic relationship; $p = .46$, FET). The two groups, however, marginally differed in gender composition, $p = .06$ (FET), with more men ($n = 9$) than women ($n = 4$) in the non-sharer (vs. sharer, $n = 28$ and $n = 46$, respectively) group.

Sharing Partner Type

Supporting Hypothesis 2a, participants were significantly more likely to share with close versus non-close others, $b = 1.67$, $SE = 0.17$, $p < .001$, odds ratio = 5.33. Participants' probabilities of sharing with different types of sharing partners estimated by MCMC are shown in Fig. 1 (see also Table 3, Panel 1 for random and fixed effects of the unconditional model). Broadly speaking, participants appeared to be most likely to share with their friends ($M = .28$, $SE = .10$, 95% CI = [.11, .51]), romantic partner ($M = .27$, $SE = .10$, 95% CI = [.11, .49]), and family member ($M = .27$, $SE = .10$, 95% CI = [.11, .49]), followed by people at work ($M = .12$, $SE = .07$, 95% CI = [.03, .29]), and were least likely to share with acquaintances or strangers ($M = .06$, $SE = .03$, 95% CI = [.02, .13]). Table 4 shows results of significance testing of pairwise contrasts of parameter estimates (i.e., probabilities in logit units) and odds ratios of sharing with different types of sharing partners.

Because we suspected that participants with and without a romantic partner may differ in their likelihoods of sharing with different types of sharing partners (i.e., those in romantic relationships may share with fewer people aside from their romantic partner), we repeated the analyses of sharing partner type among a subgroup of sharers who indicated that they were in a romantic relationship (i.e., lovebirds; $n = 53$).

Please see [Online Resource](#), Sect. 2 for the results. Findings remained largely the same for lovebirds. One expected exception is that romantic partners appear to serve a more prominent role as sharing partners among lovebirds than among all sharers.

We explored how the diversity of sharing partner network was associated with other IER variables. Participants who have a more (vs. less) diverse sharing partner network were more likely to share negative emotional experiences, $b = 1.43$, $SE = 0.20$, $p < .001$; showed a lower tendency to share with close versus non-close others, $b = -1.37$, $SE = 0.49$, $p = .005$; and were less likely to seek emotion-oriented IER goals only relative to problem-oriented IER goals only, $b = -1.07$, $SE = 0.51$, 95% CI [-2.11, -0.09]. Diversity of sharing partner network was not associated with receiving any of the six of IER strategies, $ps > .13$.

Sharing Partner Gender

To test Hypothesis 2b, we examined participants' preference for sharing with women versus with men. As expected, overall, participants were more likely to share with women versus with men, $b = 0.34$, $SE = 0.16$, $p = .03$, odds ratio = 1.41. It is important to note here that the preference for sharing with women versus with men was significantly greater among men than women, $b = -0.34$, $SE = 0.17$, $p = .04$. Specifically, preference for sharing with women versus with men was significant only for men participants (shared with women 67.7% of the time), $b = 0.86$, $SE = 0.35$, $p = .02$, odds ratio = 2.36, but not for women participants (shared with women 47.5% of the time), $b = 0.17$, $SE = 0.25$, $p = .50$, odds ratio = 1.18, meaning that the overall sharing partner gender preference was driven by men.

We suspected that the gender difference in sharing partner gender was driven by the fact that men frequently shared with romantic partners and that most men's romantic partners were women in this sample. To test this possibility, we conducted the above analyses excluding instances when the sharing partner type was romantic partner. Results showed that participant gender significantly predicted sharing partner gender, $b = 0.44$, $SE = 0.19$, $p = .02$, but the pattern was reversed such that the preference for sharing with women versus with men was significantly greater among women than men participants when we only examined sharing with non-romantic partners. Specifically, when it came to sharing partners who were not romantic partners, men did not show a preference in sharing partner gender (shared with women 48.9% of the time), $b = 0.37$, $SE = 0.40$, $p = .35$, odds ratio = 1.45, whereas women participants significantly preferred to share with women than with men sharing partners (shared with women 69.1% of the time), $b = 1.26$, $SE = 0.30$, $p < .001$, odds ratio = 3.52. In summary, men's preference for sharing with women versus with men sharing partner was driven by them sharing with

Table 3 Bayesian multilevel multinomial logistic regression model predicting sharing partner type

Parameter	Estimate (<i>SE</i>)	Lower CI	Upper CI	ESS	Rhat
Panel 1: unconditional model					
Random effects					
<i>SD</i> (intercept: romantic partner)	1.93 (0.37)	1.25	2.74	3148	1.00
<i>SD</i> (intercept: family member)	0.96 (0.32)	0.31	1.59	3467	1.00
<i>SD</i> (intercept: friend)	0.71 (0.34)	0.07	1.36	3247	1.00
<i>SD</i> (intercept: someone at work)	0.96 (0.40)	0.14	1.77	3322	1.00
<i>r</i> (intercept: romantic partner; intercept: family member)	− 0.27 (0.29)	− 0.80	0.30	2696	1.00
<i>r</i> (intercept: romantic partner; intercept: friend)	0.18 (0.33)	− 0.54	0.73	2432	1.00
<i>r</i> (intercept: romantic partner; intercept: someone at work)	− 0.02 (0.31)	− 0.65	0.56	3351	1.00
<i>r</i> (intercept: family member; intercept: friend)	− 0.21 (0.36)	− 0.84	0.51	3248	1.00
<i>r</i> (intercept: family member; intercept: someone at work)	0.06 (0.36)	− 0.70	0.68	3237	1.00
<i>r</i> (intercept: friend; intercept: someone at work)	− 0.03 (0.38)	− 0.78	0.66	3299	1.00
Fixed effects					
Intercept: romantic partner	0.98 (0.34)	0.29	1.65	3454	1.00
Intercept: family member	1.25 (0.26)	0.73	1.74	3534	1.00
Intercept: friend	1.54 (0.23)	1.08	1.99	3616	1.00
Intercept: someone at work	0.46 (0.31)	− 0.20	1.02	3221	1.00
Panel 2: including Level 2 predictors: gender and age (linear and quadratic)					
Random effects					
<i>SD</i> (intercept: romantic partner)	2.02 (0.40)	1.32	2.89	3300	1.00
<i>SD</i> (intercept: family member)	1.01 (0.33)	0.34	1.65	3384	1.00
<i>SD</i> (intercept: friend)	0.73 (0.34)	0.08	1.41	3286	1.00
<i>SD</i> (intercept: someone at work)	0.96 (0.43)	0.11	1.83	3497	1.00
<i>r</i> (intercept: romantic partner; intercept: family member)	− 0.27 (0.29)	− 0.80	0.30	2632	1.00
<i>r</i> (intercept: romantic partner; intercept: friend)	0.18 (0.33)	− 0.62	0.66	2526	1.00
<i>r</i> (intercept: romantic partner; intercept: someone at work)	− 0.01 (0.32)	− 0.66	0.60	3334	1.00
<i>r</i> (intercept: family member; intercept: friend)	− 0.13 (0.37)	− 0.81	0.57	3472	1.00
<i>r</i> (intercept: family member; intercept: someone at work)	0.01 (0.36)	− 0.74	0.64	3473	1.00
<i>r</i> (intercept: friend; intercept: someone at work)	− 0.03 (0.39)	− 0.76	0.71	3350	1.00
Fixed effects					
Intercept: romantic partner	1.70 (0.81)	0.09	3.32	3608	1.00
Intercept: family member	2.07 (0.64)	0.84	3.34	3552	1.00
Intercept: friend	1.92 (0.59)	0.80	3.16	3479	1.00
Intercept: someone at work	1.74 (0.66)	0.46	3.05	3514	1.00
Gender: romantic partner	− 0.58 (0.76)	− 2.12	0.85	3675	1.00
Gender: family member	− 0.16 (0.57)	− 1.24	1.03	3704	1.00
Gender: friend	− 0.23 (0.52)	− 1.30	0.74	3511	1.00
Gender: someone at work	− 0.51 (0.60)	− 1.67	0.64	3701	1.00
Age: romantic partner	− 0.78 (0.37)	− 1.53	− 0.09	3308	1.00
Age: family member	− 0.26 (0.29)	− 0.83	0.29	3530	1.00
Age: friend	− 0.70 (0.26)	− 1.24	− 0.22	3430	1.00
Age: someone at work	− 0.36 (0.31)	− 0.98	0.24	3468	1.00
Age ² : romantic partner	− 0.15 (0.43)	− 1.02	0.67	3619	1.00
Age ² : family member	− 0.54 (0.33)	− 1.20	0.12	3648	1.00
Age ² : friend	− 0.02 (0.29)	− 0.59	0.58	3662	1.00
Age ² : someone at work	− 0.80 (0.37)	− 1.58	− 0.10	3825	1.00

Acquaintance/stranger is the reference level in both models. Gender is a binary variable with men being the reference level. Estimates of fixed effects for which credible intervals do not contain zero are bolded. Age² quadratic age effects, CI 95% credible intervals, ESS effective sample size, *r* correlations between random effects

their romantic partners, but they did not prefer sharing partners of either gender when it came to non-romantic partners. On the other hand, women preferred to share with women versus with men when it came to non-romantic partners, but women sharing with romantic partners, who were all men in this sample, resulted in a lack of overall gender preference among women.

Sharer's IER Goals

Participants' probabilities of endorsing different IER goals estimated by MCMC are shown in Fig. 2 (see also Table 5, Panel 1 for random and fixed effects of the unconditional model). Consistent with Hypothesis 3, participants were more likely to seek emotion-oriented goals only ($M = .50$, $SE = .12$, 95% CI = [.27, .73]) relative to problem-oriented goals only ($M = .35$, $SE = .11$, 95% CI = [.16, .59]), $b = 0.66$, $SE = 0.20$, odds ratio = 1.94, 95% CI = [1.33, 2.88]. Additionally, participants were less likely to seek both types of goals ($M = .15$, $SE = .08$, 95% CI = [.05, .34]) relative to emotion-oriented goals only, $b = -2.03$, $SE = 0.33$, odds ratio = 0.13, 95% CI = [0.06, 0.24], or problem-oriented goals only, $b = -1.37$, $SE = 0.36$, odds ratio = 0.26, 95% CI = [0.12, 0.49].

Sharing Partner's IER Strategies

We examined how the six IER strategies (excluding "none of these") are related to each other. Correlations between the six IER strategies were all low in magnitude ranging from $-.24$ to $.17$, and none of them reached statistical significance (more

details about the correlations are included in [Online Resource](#), Sect. 3). Supporting Hypothesis 4a, sharing partners were significantly more likely to provide supportive than unsupportive IER strategies, $b = 2.83$, $SE = 0.47$, $p < .001$, odds ratio = 16.9. Supporting Hypothesis 4b, when providing supportive IER strategies, sharing partners were significantly more likely to provide problem-oriented than emotion-oriented supportive strategies, $b = -0.47$, $SE = 0.22$, $p = .03$, odds ratio = 1.60.

To better understand IER strategies in the context of IER goals, we examined whether the sharing partner's IER strategies match the sharer's IER goals at the survey level. Table 6 presents different types of IER strategies participants received based on their IER goal(s). Results showed that problem-oriented goals only were exactly met by only receiving problem-oriented supportive strategies in about two thirds of the surveys (63.5%), whereas emotion-oriented goals only were exactly met by only receiving emotion-oriented supportive strategies in about half of the surveys (48.4%). When participants endorsed seeking both types of goals, the goals were fully met by receiving both types of supportive strategies in about a third of the surveys (32.1%).

Exploratory Analyses of Participant Gender and Age

Gender

Among the full sample, as expected, women were significantly more likely to share negative emotional experiences than men, $b = 0.72$, $SE = 0.25$, $p = .004$. Among

Table 4 Pairwise contrasts of parameter estimates and odds ratios of sharing with five types of sharing partners

Type 1	Type 2	Difference of parameter estimates ^a (i.e., Type 1 – Type 2)			Odds ratio and CI ^b
		Coefficient (SE)	Lower CI	Upper CI	
Romantic	Family	-0.26 (0.37)	-1.01	0.45	0.77 [0.36, 1.57]
Romantic	Friend	-0.55 (0.32)	-1.21	0.04	0.58 [0.30, 1.04]
Romantic	Work	0.52 (0.38)	-0.23	1.29	1.69 [0.79, 3.64]
Romantic	Stranger	0.98 (0.34)	0.29	1.65	2.68 [1.34, 5.23]
Family	Friend	-0.29 (0.24)	-0.76	0.18	0.75 [0.47, 1.19]
Family	Work	0.78 (0.31)	0.22	1.43	2.19 [1.24, 4.17]
Family	Stranger	1.25 (0.26)	0.73	1.74	3.48 [2.07, 5.71]
Friend	Work	1.07 (0.29)	0.55	1.70	2.93 [1.74, 5.48]
Friend	Stranger	1.54 (0.23)	1.08	1.99	4.65 [2.94, 7.33]
Work	Stranger	0.46 (0.31)	-0.20	1.02	1.59 [0.82, 2.77]

Please note that any contrast between a sharing partner type with the reference level (i.e., acquaintance/stranger) is the same as parameter estimate for the intercept corresponding to that sharing partner type in the unconditional model. Estimates for which credible intervals do not contain zero are bolded. CI 95% credible intervals, *family* family member, *romantic* romantic partner, *stranger* acquaintance/stranger, *work* someone at work

^a Here parameter estimates refer to probabilities in logit units

^b Odds ratios and their credible intervals are obtained by exponentiating the coefficients and the credible interval limits of the coefficients, respectively

Fig. 1 Predicted probabilities and 95% credible intervals of sharing with five types of sharing partners

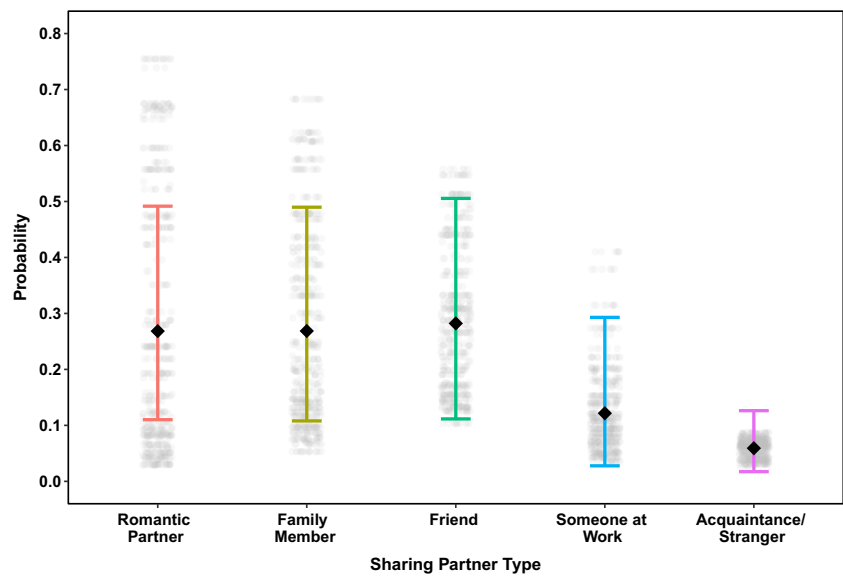


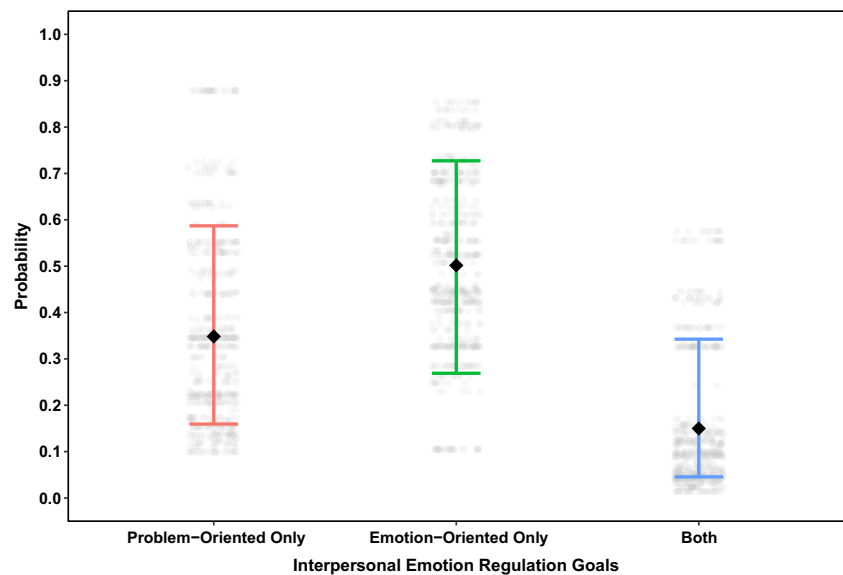
Table 5 Bayesian multilevel multinomial logistic regression model predicting interpersonal emotion regulation (IER) goals

Parameter	Estimate (SE)	Lower CI	Upper CI	ESS	Rhat
Panel 1: unconditional model					
Random effects					
SD (intercept: emotion-oriented only)	1.24 (0.21)	0.88	1.70	6949	1.00
SD (intercept: both)	1.88 (0.34)	1.31	2.64	6939	1.00
r (intercept: emotion-oriented only; intercept: both)	0.53 (0.17)	0.15	0.80	6752	1.00
Fixed effects					
Intercept: emotion-oriented only	0.66 (0.20)	0.29	1.06	6757	1.00
Intercept: both	- 1.37 (0.36)	- 2.13	- 0.71	7402	1.00
Panel 2: including Level 2 predictors: gender and age (linear and quadratic)					
Random effects					
SD (intercept: emotion-oriented only)	1.20 (0.22)	0.82	1.67	7019	1.00
SD (intercept: both)	1.77 (0.34)	1.17	2.53	7192	1.00
r (intercept: emotion-oriented only; intercept: both)	0.42 (0.21)	- 0.04	0.76	6784	1.00
Fixed effects					
Intercept: emotion-oriented only	1.02 (0.45)	0.13	1.92	6904	1.00
Intercept: both	0.18 (0.65)	- 1.11	1.40	7300	1.00
Gender: emotion-oriented only	- 0.48 (0.42)	- 1.31	0.36	7315	1.00
Gender: both	- 1.43 (0.63)	- 2.70	- 0.21	6997	1.00
Age: emotion-oriented only	- 0.46 (0.20)	- 0.86	- 0.07	6970	1.00
Age: both	- 0.56 (0.32)	- 1.22	0.04	7045	1.00
Age ² : emotion-oriented only	- 0.01 (0.24)	- 0.47	0.47	6859	1.00
Age ² : both	- 0.72 (0.41)	- 1.58	0.04	6928	1.00

Seeking problem-oriented goals only is the reference level in both models. Gender is a binary variable with men being the reference level

Age² quadratic age effects, both participant seeking both problem-oriented and emotion-oriented goals, CI 95% credible intervals, emotion-oriented only participant seeking emotion-oriented but not problem-oriented goals, ESS effective sample size, problem-oriented only participant seeking problem-oriented but not emotion-oriented goals, r correlations between random effects

Fig. 2 Predicted probabilities and 95% credible intervals of seeking different interpersonal emotion regulation goals



the sharers only, however, women and men did not differ in likelihood of sharing negative emotional experiences, $b = 0.31$, $SE = 0.21$, $p = .14$. Further, the sharer's gender was not associated with the likelihood of sharing with any type of sharing partner (Table 3, Panel 2). Supporting our hypothesis, women ($M = 0.87$, $SD = 0.42$) scored higher on diversity of sharing partner network than did men ($M = 0.56$, $SD = 0.42$), $b = 0.32$, $SE = 0.10$, $p = .003$. In terms of IER goals, compared to men, women were more likely to seek problem-oriented goals only relative to seeking both types of goals (see Table 5, Panel 2); women and men did not differ in seeking emotion-oriented goals

relative to either problem-oriented goals only or both types of goals. Regarding IER strategies, women and men did not differ in receiving any type of IER strategies, $ps > .26$. However, the *gender of sharing partners* was associated with *providing* different IER strategies: Sharing partners who were women were less likely to provide unsupportive IER strategies, including blaming, $b = -0.84$, $SE = 0.41$, $p = .04$, and invalidation, $b = -0.92$, $SE = 0.33$, $p = .006$, than sharing partners who were men; sharing partners did not significantly differ in providing the four supportive IER strategies based on their gender, $ps > .10$.

Table 6 Percentages of receiving different types of interpersonal emotion regulation (IER) strategies by IER goals at the survey level

	Types of IER goals		
	Problem-oriented goals only (148 surveys)	Emotion-oriented goals only (213 surveys)	Both types of goals (78 surveys)
Received supportive strategies only (no unsupportive strategies):			
Problem-oriented supportive strategies only	63.5%	25.8%	17.9%
Emotion-oriented supportive strategies only	6.1%	48.4%	25.6%
Both types of supportive strategies	6.8%	13.1%	32.1%
Received both supportive and unsupportive strategies			
Problem-oriented supportive strategies and unsupportive strategies	1.4%	2.8%	2.3%
Emotion-oriented supportive strategies and unsupportive strategies	0.7%	0.5%	0.5%
Both types of supportive strategies and unsupportive strategies	0%	0.9%	4.2%
Received unsupportive strategies only (no supportive strategies)			
Unsupportive strategies only	21.6%	8.5%	5.1%

The percentages represented the proportion of time participants received certain types of IER strategies when they sought a particular type of IER goal; for example, out of all 148 surveys in which participants reported seeking problem-oriented goals only, problem-oriented supportive strategies only were reportedly provided in 63.5% of the surveys. This table does not include surveys in which only "none of these" was selected as the IER strategy. Bolded percentages represent instances where IER goals are exactly met by received IER strategies

Age

Contrary to our hypothesis, there were no linear or quadratic associations between age and likelihood of sharing among all participants (linear: $b = 0.17$, $SE = 0.12$, $p = .17$; quadratic: $b = 0.04$, $SE = 0.15$, $p = .78$) or among the sharers (linear: $b = 0.11$, $SE = 0.10$, $p = .26$; quadratic: $b = -0.05$, $SE = 0.12$, $p = .70$). Age was significantly associated with the likelihood of sharing with different types of sharing partners. The associations between age and probabilities of sharing with the five types of sharing partners for women and men are separately presented in Fig. 3 (see [Online Resource](#), Sect. 4 for the figure with 95% credible intervals). Although across the sample, people were more likely to share with close than with non-close others, the tendency to share with close versus non-close others decreased as age increased (linear: $b = -0.33$, $SE = 0.16$, $p = .04$; quadratic: $b = 0.27$, $SE = 0.19$, $p = .16$), and age was not related to diversity of sharing partner network (linear: $b = 0.01$; $SE = 0.02$, $p = .49$; quadratic: $b = -0.00$, $SE = 0.00$, $p = .56$). These last two findings were inconsistent with our hypotheses. Age was significantly associated with likelihood of endorsing different types of IER goals (see Table 5, Panel 2). The associations between age and probabilities of seeking different types of IER goals are presented in Fig. 4 (see [Online Resource](#), Sect. 5 for the figure with 95% credible interval). Although across the sample, people were more likely to seek emotion-oriented goals only relative to problem-oriented goals only, contrary to our hypothesis, as age increased, people showed a decreased likelihood of seeking emotion-oriented goals only relative to problem-oriented goals only. Regarding IER strategies, older age was associated with receiving significantly less emotion-oriented supportive strategies, including encouraging sharing (linear: $b = -0.47$, $SE = 0.20$, $p = .02$; quadratic: $b = 0.30$, $SE = 0.25$, $p = .25$), and, at a trend level, affection (linear: $b = -0.35$, $SE = 0.19$, $p = .07$; quadratic: $b = 0.02$, $SE = 0.24$, $p = .92$); age was not associated with receiving any other types of IER strategies, $ps > .18$.

Discussion

People regulate their emotions in countless ways, including turning to others for help, or IER. In this study, we examine everyday IER among healthy adults, focusing on instances when people shared negative emotional experiences. The present findings provide important insight into the basic elements of IER in daily life.

We found that almost everyone shared at least one negative emotional experience over the sampling period, with people on average sharing once every 2 days. These findings highlight the ubiquity of IER and are consistent with research on IER using daily diaries (Swerdlow & Johnson, 2019). These frequencies may be an underestimation given that participants were asked to

only report on one disclosure per survey and on disclosures to a single other person. Participants were more likely to share with close than with non-close others, consistent with our hypotheses and social sharing of emotion research (Rimé, 2009). We introduced the concept of diversity of sharing partner network, which represents the extent to which participants utilize different types of relationships for IER, extending research examining a similar construct derived from self-reported nominations (i.e., emotionship; Cheung et al., 2015). Future research could explore the mechanisms through which a diverse sharing partner network may enhance one's ER skills.

The current research provides a nuanced understanding of participants' preferences for the gender of their sharing partners. Overall, participants were more likely to share with women than men. Women shared equally with both genders, whereas men shared more with women (vs. men). Importantly, this pattern was driven by participants' frequent sharing with their romantic partners, almost all of whom were of the opposite gender. When romantic partners were excluded as sharing partners, women shared more with women (vs. men), whereas men shared with both genders equally, contradicting the popular notion depicting women as preferred confidants.

This research also elucidates sharers' goal preferences, sharing partners' responses, and the extent to which they match. As predicted, participants were more likely to seek emotion-oriented goals only relative to problem-oriented goals only, highlighting adults' greater needs for empathy and understanding relative to advice and problem solving. Sharing partners were more likely to provide supportive than unsupportive strategies. Reappraisal, problem solving, and affection were frequently endorsed, whereas invalidation and blaming were infrequently endorsed. When providing supportive strategies, sharing partners were more likely to provide problem-oriented than emotion-oriented strategies. Examining strategies in the context of goals, participants were most likely to have their exact goals met when they sought problem-oriented goals only (vs. other types). Most mismatch between goals and supportive strategies appears to be participants receiving problem-oriented supportive strategies only when seeking emotion-oriented goals only. An important avenue for future research is to explore how the effectiveness of strategies differ based on the sharer's goals.

We explored how participant gender and age are associated with IER. We did not find clear evidence for a gender difference in likelihood of sharing. Women had a more diverse sharing partner network than men, although women and men did not differ in likelihood of sharing with any types of sharing partners. These results provide a nuanced understanding of gender differences in adults' choices of sharing partners by differentiating sharing with a specific type of sharing partner on a single occasion and diversity of sharing partner network across multiple occasions. Sharing partners who were women (vs. men)

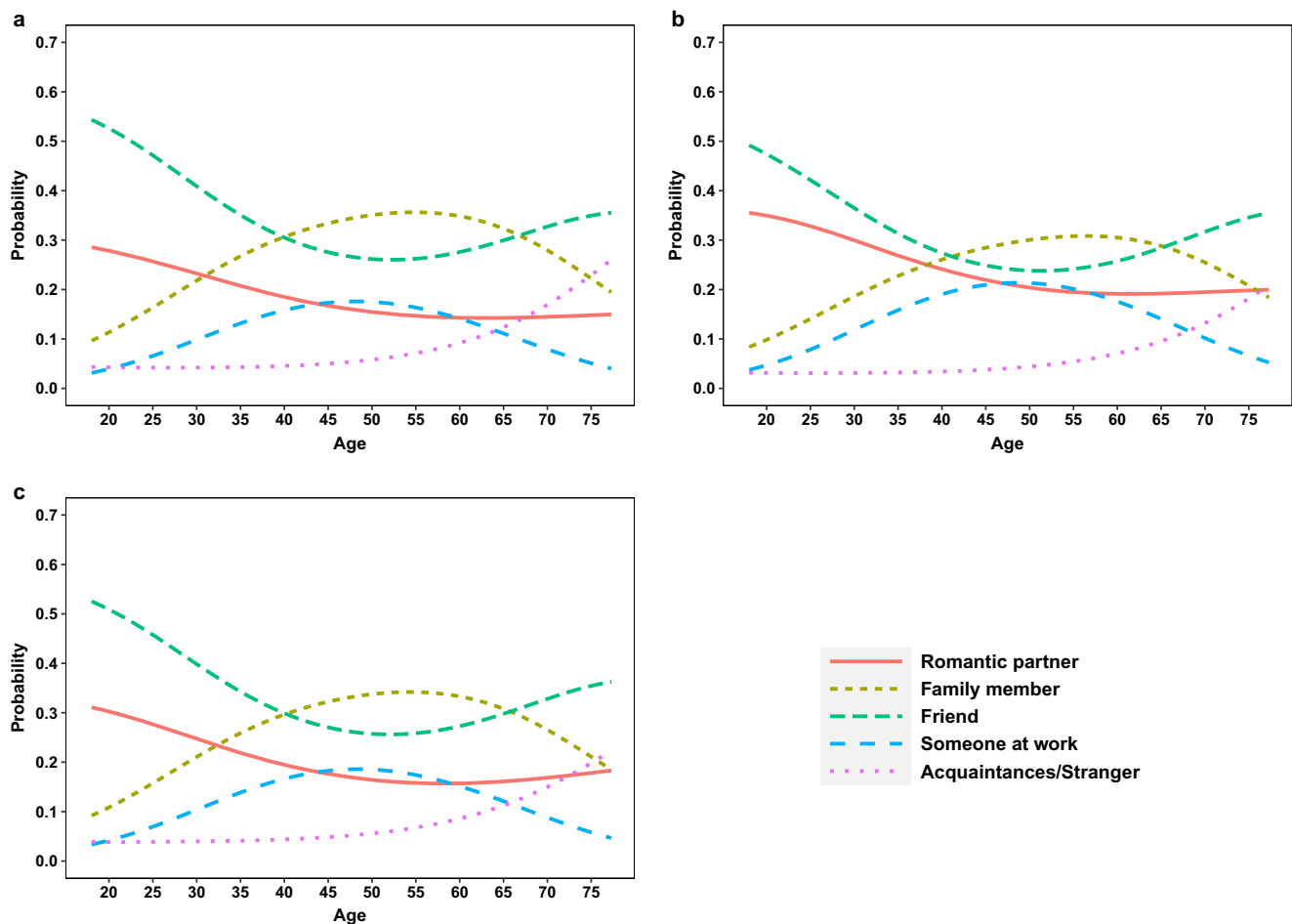


Fig. 3 Predicted probabilities of sharing with five types of sharing partners as a function of age among **a** women, **b** men, and **c** all participants. Note that 95% credible intervals are not depicted here for figure clarity, but please see [Online Resource](#), Sect. 4 for this figure with 95% credible intervals added

were less likely to provide unsupportive strategies, possibly driven by gender role expectations (Abele, 2003).

Age was not associated with likelihood of sharing, but it was associated with choices of sharing partners. Although across the sample, people tended to share with close (vs. non-close) others and seek emotion-oriented goals only relative to problem-oriented goals only, these tendencies decreased with increasing age. These unexpected findings may be because we examined IER after negative events have occurred, as predictions based on the socioemotional selectivity theory have been supported for ER efforts that occur early in the emotion-eliciting process (e.g., situation selection; Livingstone & Isaacowitz, 2019).

Given that IER is such a complex phenomenon, there are several promising avenues for future research. We focused on whether participants shared their negative emotional experiences with another person, but people may engage in IER that does not involve doing this (e.g., engaging in fun activities with friends when feeling lonely) and with more than one person (e.g., social media). Furthermore, people do not always intend to regulate emotion when they share an emotional experience (e.g.,

informing/warning others; Duprez et al., 2015). Because we did not assess whether a negative experience had occurred, research is needed to examine the circumstances under which participants choose to engage in IER when facing negative experiences and the ways in which people strategically select social partners to advance their goals (Cheung et al., 2015). It may also be informative to examine the characteristics of shared emotional experiences, as they could shape IER. For example, for more (vs. less) intense emotional experiences, sharers may be more likely to seek emotion-oriented relative to problem-oriented goals in efforts to directly address intense negative emotions. Additionally, there are IER strategies not assessed in this study, as evidenced by participants' frequent endorsement of the "none of these" strategy category. Finally, future research may profitably examine the current classification of IER strategies in comparison with alternative approaches (e.g., responsiveness, cognitive support, hostility, physical presence; Swerdlow & Johnson, 2019).

Despite these limitations, this study is one of the first to naturalistically examine IER. The findings highlight the

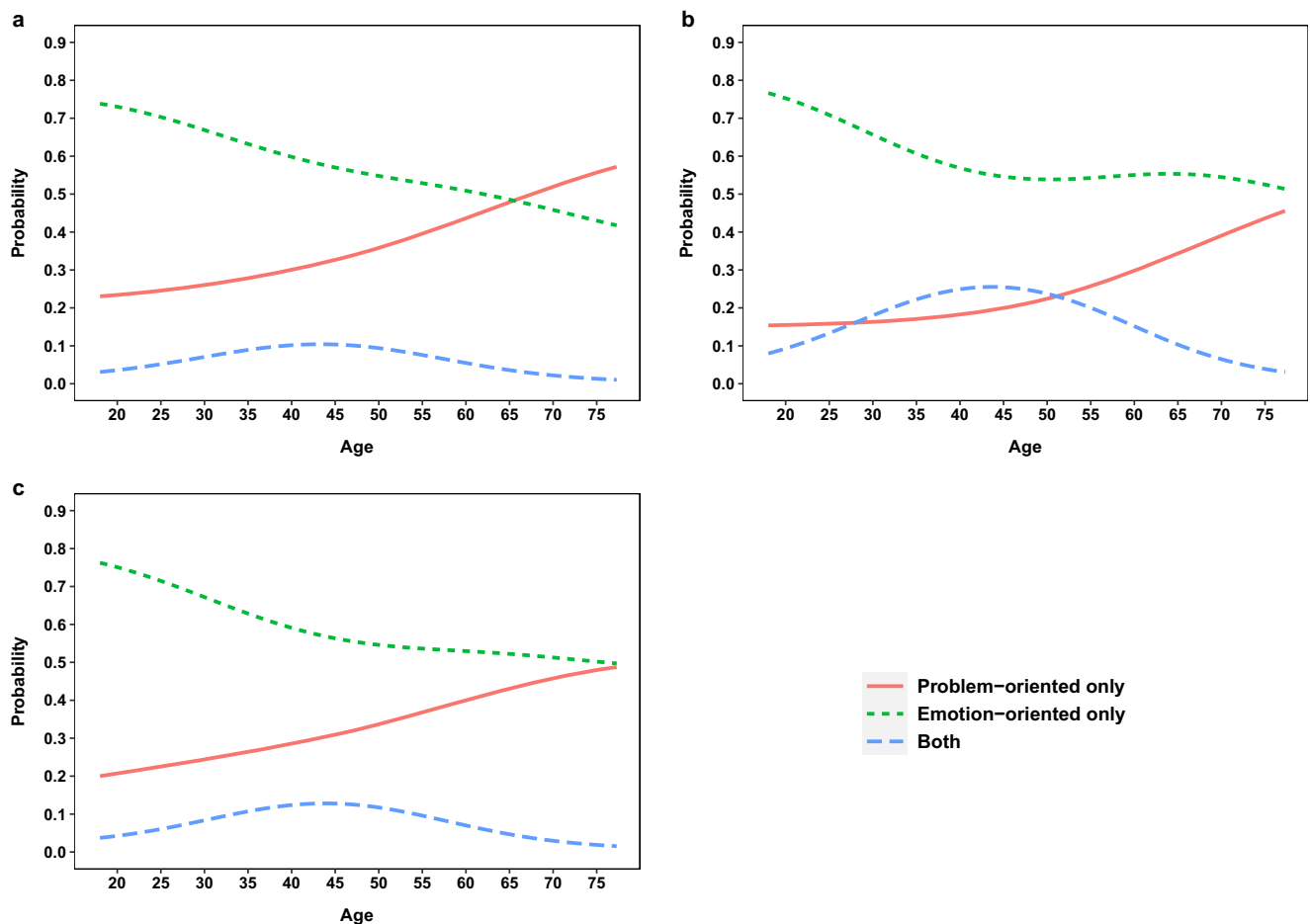


Fig. 4 Predicted probabilities of seeking different interpersonal emotion regulation goals as a function of age among **a** women, **b** men, and **c** all participants. Note that 95% credible intervals are not depicted here for

figure clarity, but please see [Online Resource](#), Sect. 5 for this figure with 95% credible intervals added

ubiquity of IER and elucidate the behaviors of both the sharer and the sharing partner during the IER process. They provide important insight into the fundamental elements of everyday IER among psychologically healthy adults, contributing to the broader ER literature.

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s42761-021-00044-y>.

Author Contribution DYL and RJT conceptualized the study and oversaw data collection and management. DYL and MJS analyzed the data. DYL and RJT collectively wrote this manuscript with MJS providing critical feedback. All three authors have approved the final manuscript.

Additional Information

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Data Availability The datasets generated during and/or analyzed during the current study are available in the Open Science Framework repository, https://osf.io/7hzdv/?view_only=7887c8e2cdbf40dd9fb961b252d57369.

Code Availability R code used to conduct the analyses in the current study is available in the Open Science Framework repository, https://osf.io/7hzdv/?view_only=7887c8e2cdbf40dd9fb961b252d57369.

Conflict of Interest The three authors declare that they have no conflicts of interest.

Ethics Approval This study was approved by Washington University Institutional Review Board (#201709046).

Informed Consent Informed consent was obtained from all participants in this study.

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