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The consequences of spousal infidelity for long-term chronic health: A two-wave longitudinal analysis

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Abstract

Objective: Research links low marital quality to poor mental and physical health, but the impact of spousal infidelity on long-term chronic health, especially using longitudinal data, is understudied. The present work investigates whether infidelity predicted long-term chronic health, and whether demographic factors and support or strain from friends or family moderated this relationship. **Methods:** Using longitudinal data from 2579 adults from the United States (1093 males, 1486 females; M_{age} = 57.17, $Median_{age}$ = 56, SD_{age} = 12.26, age range: 33–84 years), we examined associations between partner infidelity and chronic health conditions across two timepoints (T1: 2004–2006, T2: 2013–2014). We analyzed participants' history of partner infidelity at T1 and its relationship with chronic health through mixed models as well as latent variable structural equation modelling. We also examined whether supportive relationships and demographic variables moderated these associations. **Results:** Controlling for demographic covariates (age, gender, education, ethnicity, employment, marital status, marital satisfaction and income level), infidelity was linked to poorer chronic health in mixed model analyses ($p < .001$), and this finding was also supported in latent variable analyses that controlled for baseline chronic health ($p = .003$). Additionally, moderation analyses found that the impact of infidelity on chronic health was larger among low-income individuals and ethnic minorities. **Conclusion:** Partner infidelity has lasting detrimental associations with chronic health that are not mitigated by positive relationships. The research highlights the potential long-term health implications of partner infidelity and suggests the need for interventions to mitigate such negative effects.

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Infidelity is a widespread phenomenon, with a meta-analysis of 50 studies revealing a lifetime prevalence of committing infidelity in 34% of men and 24% of women (Tafoya & Spitzberg, 2009). Some research has highlighted potential detrimental effects (Fincham & May, 2017; Warach & Josephs, 2019) such as lowered self-esteem (Bird et al., 2007), increased episodes of depression and anxiety (Allen & Atkins, 2005; Bird et al., 2007) and emotional dysregulation (Warach & Josephs, 2019) in non-involved partners. Some have also suggested that suboptimal physical health in the context of infidelity could be an indirect consequence of health-compromising behaviors associated with mental health conditions (Shrout & Weigel, 2017), and there is emerging evidence that romantic betrayal could lead to the deterioration of physical health among non-involved partners (Lonergan et al., 2020; Shackelford et al., 2000). However, complicating this, a recent review suggested that the consequences of infidelity vary widely, particularly when considered in combination with demographic factors (Rokach & Chan, 2023). Given the wide range of potential deleterious effects and given the lack of clarity in the literature on the implications of infidelity, some researchers have raised questions about the necessity of exploring additional contexts, such as the role of social support (Shrout & Weigel, 2017), which can potentially mitigate the negative effects of infidelity.

Although some studies suggest links between infidelity and physical health, there is little direct evidence on the long-term effects of infidelity on chronic health. Some suggestive evidence comes from findings indicating that infidelity is common among those with low relational satisfaction or who negatively evaluated their marriage (Previti & Amato, 2004; Treas & Giesen, 2000), which significantly affects self-rated health outcomes (Umberson et al., 2006; Wickrama et al., 1997). While low relational quality is consequential for physical health over the life course, affecting a range of outcomes (Martire et al., 2010; Miller et al., 2013), some longitudinal studies have questioned this link (Kalmijn, 2017), with a recent meta-analysis noting that the literature is inconclusive (Robles et al., 2014). Given that partner infidelity likely represents a particularly severe behavioral expression of poor relationship quality (Lavner & Bradbury, 2010), it may be likely that these non-involved partners are likely to suffer substantial health consequences, though there remains little direct empirical evidence of this.

Considering the lack of definitive findings in existing literature, the potential consequences of infidelity remains inadequately understood, especially given that much research relies on cross-sectional designs and retrospective data (Weiser et al., 2022) which may not provide evidence of longer-term relationships. Despite calls for more research on contextual stressors like infidelity (Robles, 2015), no longitudinal study has directly examined this link. Additionally, it is worth noting that many studies on infidelity frequently employ small, non-representative, or clinical samples (Fincham & May, 2017).

A large-scale longitudinal examination of this issue would thus address this question more effectively.

Infidelity, characterized as an act of profound and irrevocable romantic betrayal (Watkins & Boon, 2016), poses a significant threat to relationship stability (Atapour et al., 2021) due to the high standards of loyalty and commitment (Olson et al., 2002) that individuals typically hold in their relationships (e.g., the expectancy violation theory; (Stavrova et al., 2023). Moreover, in addition to its associations with marital distress, studies have also demonstrated that violations of fundamental assumptions and the shattering of core beliefs pivotal to non-involved partners' emotional security may be central to experiencing partner infidelity (Snyder et al., 2008). Given that infidelity is often conceived as a form of interpersonal trauma (e.g., Lonergan et al., 2020), it is reasonable to anticipate enduring repercussions on physical health attributable to this stressor. Indeed, attachment theory studies have shown that shattered core beliefs can create psychological distress, resulting in dysregulation and adverse health consequences (Warach & Josephs, 2019). Previous work using the dyadic stress model has also theorized that dyadic stress within couples could affect both partners (Bodenmann, 2005) and that such stress responses have biological and physiological correlates (Randall & Bodenmann, 2009; Schneiderman et al., 2005). Further, romantic betrayal initiates a disrupted state, ushering in a period of additional chronic strains (Williams & Umberson, 2004) as the relationship becomes increasingly strained. While there is emerging evidence of marital stress altering endocrine, cardiovascular, and immune functions, which are key pathways linking troubled relationships to poor health (Kiecolt-Glaser and Lovesick, 2017; Pietromonaco & Collins, 2017), no empirical research to our knowledge has directly examined associations between partner infidelity and long-term chronic health in non-involved partners, which makes this a crucial gap in the empirical literature. Addressing this issue also has substantial practical importance given the growing prevalence of infidelity with the rise of social networking platforms (Martins et al., 2016; Merkle & Richardson, 2000), and a better understanding of its health and well-being consequences is both timely and crucial.

Moreover, infidelity has been found to be particularly difficult to address in therapeutic contexts (Bravo & White Lumpkin, 2010; Goldie, 2013), and a further question then concerns whether there are mitigating factors that could be identified. Addressing this question could potentially inform future work aiming to alleviate the negative health consequences of partner infidelity. One such possibility is the critical roles of friends and family. While victims often seek support from social relations (Bryant & Conger, 1999) and to make sense of the transgression (Duncombe et al., 2014; Klein & Milardo, 2000), research has scarcely examined if supportive non-romantic relationships protect against the well-being impacts of infidelity. Some evidence suggests they might, as Keneski et al. (2017) found that spouses with higher social support experienced less psychological stress from marital conflict. Consequently, such findings highlight that perceived support may lead to positive long-term health outcomes (Thoits, 2011; Uchino, 2012). Furthermore, it is also possible that strained friendships and family relationships could worsen the negative implications of partner infidelity. However, the evidence remains inconclusive, and no direct tests have been performed specifically among individuals who

have suffered from partner infidelity. Pasch and Bradbury (1998) found no buffering effects of strong support behaviors on marital stress, and recent reviews (Garssen, 2004; Murberg, 2004) report mixed findings on the link between relationship satisfaction and health. Thus, existing studies do not clearly support predictions on how the quality of one's friendships and family relationships could interact with partner infidelity in predicting chronic health, and an exploratory data-driven approach may thus be more appropriate. Specifically, we argue that a direct empirical test of whether such relationships would moderate associations between infidelity and health within a longitudinal framework could address this question more effectively.

Another crucial factor is the role of demographic characteristics. Although no studies have directly explored the influence of demographics on infidelity and physical health over time, prior research on marital quality does suggest possible connections. For example, several studies have demonstrated that women tend to report lower levels of marital satisfaction compared to men (Jackson et al., 2014; Kim, 2021), possibly due to greater psychological reactivity to marital stress (Beam et al., 2018). Others have also suggested that gender differences in the effects of marital quality may depend on age (Umberson & Williams, 2005), although this possibility remains unclear. Younger individuals may experience more marital conflicts, including infidelity-related issues, driven by youthful energy and pursuit of new experiences (Amato & Rogers, 1997; Ventura-León & Lino-Cruz, 2023), though some studies find no age-related effects on marital satisfaction (Ziaee et al., 2014). Beyond age and gender, lower-income couples have been argued to be more susceptible to financial strain, higher marital distress, and lower marital satisfaction (Karney, 2021). However, some have also proposed that couples with lower socio-economic status become more resilient, adapting to each stressor more effectively due to their frequent exposure (Neff & Broady, 2011; Schetter & Dolbier, 2011). Recent reviews have also questioned the global existence of associations between marital quality and education level (Sorokowski et al., 2017). While some studies link higher education to more marital conflict (Zainah et al., 2012), others find no correlation (Alder, 2010). Given these inconsistencies, the question of whether and how the implications of infidelity on chronic health may vary depending on demographic variability remains uncertain, and addressing this thus also has substantial theoretical and practical importance.

In summary, the present study addresses the following key questions: (1) Is partner infidelity associated with poorer long-term chronic health? (2) Could having supportive or strained friendships and family relationships mitigate or exacerbate the negative chronic health consequences of partner infidelity? (3) Do demographic variables (age, gender, education level, income, ethnicity, employment status, marital status) act as potential protective or risk factors in associations between infidelity and long-term chronic health? To address these questions, we used longitudinal data from a large sample of American adults to examine the implications of infidelity on non-involved partners' chronic health over two waves that span approximately nine years. We utilized a combination of observed and latent variable analyses to provide a comprehensive examination, and we adjusted for key demographic variables that have been linked to both marital variables and physical health (Atkins et al., 2001; Jose & Alfons, 2006; Kiecolt-Glaser & Newton,

2001). We also performed autoregressive analyses in which baseline chronic health was accounted for to provide a particularly stringent test that may enable directional interpretations across two measurement occasions (Adachi & Willoughby, 2015). Additionally, to test whether having other supportive relationships could mitigate the negative consequences of partner infidelity, we investigated whether support and strain from family and friends would moderate associations between infidelity and chronic health. Finally, to test whether the implications of infidelity could vary depending on demographic variables, we also tested whether age, gender, education level, income, ethnicity, employment status, marital status, and relationship satisfaction would moderate associations between infidelity and chronic health. We hypothesized that partner infidelity would be linked to poorer chronic health, both immediately and in the long-term. Given inconsistent evidence relating to the potential moderating roles of other social relationships and demographic variables, we hence made no a priori hypotheses and took a data-driven approach to testing these relationships.

Method

Participants

Participants for this study came from the Midlife Development in the United States (MIDUS) study, which draws from a nationally representative random-digit-dial sample of participants from the United States. Specifically, we analyzed data from 2579 participants (M_{age} = 57.17, $Median_{age}$ = 56, SD_{age} = 12.26, age range: 33–84 years). All participants were cisgender; specifically, 1093 identified themselves as cisgender males, and 1486 identified themselves as cisgender females; 2376 participants identified as White, 82 participants identified as African American, 41 participants identified as Native American, 6 participants identified as Asian, 1 participant identified as Native Hawaiian, and 62 participants belonged to other ethnicities; 2414 participants identified themselves as heterosexual and 63 participants identified themselves as non-heterosexual; 1806 participants were married, 40 participants were separated, 343 participants were divorced, 211 participants were widowed, and 175 participants were never married. The average education level of the sample corresponded to approximately college-level education; average annual household income of the sample was 68375.13USD; and 1293 participants were employed while 1277 participants were unemployed. MIDUS2 (T1) was conducted between 2004 and 2006, and a longitudinal follow-up, MIDUS3 (T2), was conducted between 2013 and 2014. Participants who took part in MIDUS2 and MIDUS3 completed a phone interview and a questionnaire that was sent via mail, in which relevant data was collected on participants' demographics, history of partner infidelity, relationships, and chronic health. Power analyses indicated that the present sample size would be adequate for detecting even small effect sizes with larger than .99 power. As is typical of large-scale longitudinal studies, missing data due to attrition occurred across the two waves, and complete data was available for 65.3% of participants. To account for missing data, additional analyses were performed in which full information maximum likelihood (FIML) procedures were applied. Materials as well as data for the

study are accessible from MIDUS at https://midus.wisc.edu/, while analytic codes are uploaded at https://osf.io/uakq3/?view_only=2d044101c1fc4c4cb17c7de1d861c7a8.

Measures

Infidelity. One item was included at T1 in which participants indicated whether their spouse/partner had engaged in infidelity or marital infidelity (1 = *Yes*, 0 = *No*).[1]

Chronic health conditions. Chronic health conditions were assessed at both T1 and T2 based on the total number of chronic conditions participants reported experiencing. Participants were provided a checklist of 30 conditions (e.g., lung problems, migraine headaches, chronic sleeping problems),[2] and they then indicated whether they experienced or were treated for each condition (1 = *Yes*, 0 = *No*). The total number of chronic conditions was calculated by summing the total number of conditions they checked 'Yes' to. To ensure measurement consistency between the two time points, additional items that were included in the checklist at T2 were not used for analyses.

Covariates. Age, gender (1 = *male*, 0 = *female*), education level (from 1 representing "*no education or some grade school*" to 12 representing "*PhD or other comparable qualifications*"), ethnicity (due to the very small number of participants of non-White ethnicities, we dichotomized this variable as 1 = *White,* 0 = *Non-White*), marital status (1 = *married*, 0 = *not married*), employment status (1 = *employed*, 0 = *unemployed*), relationship satisfaction (participants rated their current relationship[3] on a 10-point Likert scale from 0 = *Worst* to 10 = *Best*) and annual household income in absolute values were included as demographic covariates. Due to their large numerical values, values for income were divided by 10000 prior to analyses to improve the interpretability of regression coefficients, while values for age were divided by 10.

Friendship and family relationship support and strain. Friendship and family relationship support and strain at T1 were measured using a total of sixteen items. Four items each assessed family support and friendship support (e.g., "*How much do your friends really care about you?"; "Not including your spouse or partner, how much do members of your family really care about you?*"), while four items each assessed family strain and friendship strain (e.g., *"How often do your friends make too many demands on you?"; "Not including your spouse or partner, how often do members of your family make too many demands on you?"*). All items were administered on 4-point Likert scales, and the respective items were then averaged to calculate friendship relationship support (α = .87), friendship relationship strain (α = .78), family relationship support (α = .84) and family relationship strain (α = .78).

Results

Observed and latent variable analyses predicting chronic conditions

Descriptive statistics are summarized in Table 1, and inter-correlations between all variables are reported in Table S1.

We performed a mixed model analysis to test whether participants who had suffered partner infidelity differed from those that did not on their chronic health, as well as whether there were significant changes across time. Chronic health was examined as a time-varying dependent variable across the two time points. Age, gender, education level, income, ethnicity, and employment status at baseline were adjusted for. Additionally, to account for the possibility that infidelity could be intertwined with long-term changes in marital status and relationship satisfaction, these variables were controlled for as time-varying covariates and were accounted for at both T1 and T2 in our mixed model. The results for the analysis are summarized in Table 2. As shown in Table 2, the experience of partner infidelity was indeed associated with poorer overall chronic health across both time points even after controlling for all covariates. The interaction between infidelity and time was non-significant, suggesting that associations between infidelity and chronic health remained constant across both time points.

To further test whether missing data due to attrition could have biased the findings, we repeated the key analyses using latent variable structural equation modelling with full-information maximum likelihood (FIML), which provides the gold standard approach for handling missing data that outperforms listwise deletion even under conditions where data

Table 1. Descriptive statistics for all key variables.

	M	*SD*	*Range*
Age	57.17	12.26	33–84
Gender		1093 male, 1486 female	
Education level	7.20	2.52	1–12
Income	68375.13	58403.30	0 to 300,000
Employment		1293 employed, 1277 unemployed	
Ethnicity		2376 white, 192 non-white	
T1 marital status		1806 married, 769 not married	
T2 marital status		1231 married, 658 not married	
T1 relationship satisfaction	8.16	1.95	0–10
T2 relationship satisfaction	8.41	1.86	0–10
Family support	3.53	0.58	1–4
Family strain	2.03	0.59	1–4
Friendship support	3.30	0.64	1–4
Friendship strain	1.83	0.49	1–4
T1 chronic conditions	2.55	2.53	0–30
T2 chronic conditions	2.84	2.59	0–16
Infidelity		1916 no, 663 yes	

Table 2. Results of mixed model analyses predicting chronic conditions.

	b	*SE*	*p*	*β*	95% CI
Age	0.30***	0.05	<.001	.15	[.10, .19]
Gender	0.50***	0.10	<.001	−0.10	[−.15, −.06]
Education level	−0.07**	0.02	.002	−.07	[−.11, −.03]
Income	−0.02*	0.01	.011	−.06	[−.10, −.01]
Ethnicity	−0.79***	0.21	<.001	−.08	[−.12, −.04]
Employment status	−0.56***	0.11	<.001	−.12	[−.16, −.07]
Marital status	−0.38*	0.17	.028	−.04	[−.08, −.001]
Relationship satisfaction	−0.06**	0.02	.006	−.05	[−.08, −.01]
Time	0.21***	0.03	<.001	.08	[.06, .11]
Infidelity	0.20***	0.05	<.001	.08	[.04, .12]
Infidelity × time	0.01	0.03	.66	.01	[−.02, .03]

Time is coded such that 0 represents Time Point 1 and 1 represents Time Point 2; the variable thus represents the period between the measurements of chronic conditions across the two time points.
***$p < .001$.
**$p < .01$.
*$p < .05$.

is missing not at random (MNAR; Enders & Bandalos, 2001; Muthén et al., 1987). Given that interactions with time were not found to be supported, we focused on examining between-person associations between T1 infidelity and T2 chronic conditions in autoregressive models adjusting for T1 chronic conditions, which provides a particularly stringent analysis of long-term between-person relationships even after accounting for baselines of the outcome variable (Adachi & Willoughby, 2015). Age, gender, education level, income, employment status, marital status, and marital satisfaction were also adjusted for. Even after these stringent adjustments and after accounting for missing data, results indicated that T1 infidelity remained associated with T2 chronic conditions ($b = 0.34$, $SE = 0.11$, $p = .003$, 95% CI [0.12, 0.56], $\beta = .06$). Thus, the results remained robust regardless of missing data or analytic approach.

Moderation analyses

We next explored using a mixed model to test the possibility that the implications of infidelity on chronic health could be alleviated by other relationships, as well as the possibility that infidelity could differentially affect chronic health depending on demographics. These were done by first standardizing the predictor and the moderator, and by testing separate models in which the interaction term between infidelity and the moderator were included into the mixed model analyzed in the previous section. The same covariates as before were also included across all models. The results of all moderation analyses are summarized in Table 3. As shown in Table 3, the following interaction terms were significant at the $p < .05$ level: "Infidelity × Family Strain", "Infidelity × Income", "Infidelity × Ethnicity", and "Infidelity × Employment". However, upon correcting for

Table 3. Moderation analyses testing the interaction term between infidelity and family/friendship support, family/friendship strain, and demographics.

	b	*SE*	*p*	*β*	*95% CI*
Model testing family support as moderator					
Infidelity	0.18***	0.05	<.001	.07	[.03, .11]
Family support	−0.34***	0.05	<.001	−.14	[−.18, −.10]
Infidelity × family support	0.02	0.05	.71	.01	[−.03, .04]
Model testing family strain as moderator					
Infidelity	0.16***	0.05	.002	.06	[.02, .10]
Family strain	0.41***	0.05	<.001	.17	[.13, .21]
Infidelity × family strain	0.11*	0.05	.032	.04	[.001, .08]
Model testing friendship support as moderator					
Infidelity	0.19***	0.05	<.001	.08	[.04, .12]
Friendship support	−0.20***	0.05	<.001	−.09	[−.13, −.04]
Infidelity × friendship support	−0.004	0.05	.94	−.001	[−.04, .04]
Model testing friendship strain as moderator					
Infidelity	0.19***	0.05	<.001	.08	[.04, .12]
Friendship strain	0.28***	0.05	<.001	.11	[.07, .16]
Infidelity × friendship strain	−0.02	0.05	.68	−.01	[−.05, .03]
Model testing age as moderator					
Infidelity	0.21***	0.06	<.001	.08	[.04, .12]
Age	0.38***	0.07	<.001	.15	[.10, .19]
Infidelity × age	0.04	0.06	.51	.01	[−.03, .06]
Model testing gender as moderator					
Infidelity	0.20***	0.05	<.001	.08	[.04, .12]
Gender	−0.25***	0.05	<.001	−.10	[−.15, −.06]
Infidelity × gender	−0.09	0.05	.088	−.04	[−.08, .01]
Model testing education as moderator					
Infidelity	0.20***	0.05	<.001	.08	[.04, .12]
Education	−0.17**	0.05	.002	−.07	[−.11, −.03]
Infidelity × education	−0.04	0.05	.46	−.02	[−.06, .02]
Model testing income as moderator					
Infidelity	0.20***	0.05	<.001	.08	[.04, .12]
Income	−0.15**	0.05	.006	−.06	[−.10, −.01]
Infidelity × income	−0.14**	0.05	.005	−.06	[−.10, −.02]
Model testing ethnicity as moderator					
Infidelity	0.20***	0.05	<.001	.08	[.04, .12]
Ethnicity	−0.20***	0.05	<.001	−.07	[−.11, −.03]
Infidelity × ethnicity	−0.17**	0.05	.002	−.06	[−.10, −.02]
Model testing employment status as moderator					
Infidelity	0.21***	0.05	<.001	.08	[.04, .12]
Employment	−0.29***	0.06	<.001	−.12	[−.16, −.07]
Infidelity × employment	−0.10*	0.05	.048	−.04	[−.08, −|<.001|]

(continued)

Table 3. (continued)

	b	*SE*	*p*	*β*	95% *CI*
Model testing marital status as moderator					
Infidelity	0.20***	0.05	<.001	.08	[.04, .12]
Marital status	−0.17*	0.08	.029	−.04	[−.08, −.001]
Infidelity × marital status	−0.06	0.07	.36	−0.01	[−0.04, 0.02]
Model testing relationship satisfaction as moderator					
Infidelity	0.20***	0.05	<.001	.08	[.04, .12]
Relationship satisfaction	−0.12**	0.04	.005	−.05	[−.09, −.02]
Infidelity × relationship satisfaction	0.04	0.04	.35	0.01	[−0.02, 0.05]

Each interaction term was tested in a separate model to avoid multicollinearity. Age, gender, education level, income, ethnicity, employment status, marital status at both time points, relationship satisfaction at both time points, and time between measurements were controlled for in all models.
***$p < .001$.
**$p < .01$.
*$p < .05$.

multiple comparisons using the Benjamini-Hochberg procedure (Benjamini & Hochberg, 1995), only the "Infidelity × Income" ($p_{adjusted} = .031$) and "Infidelity × Ethnicity" ($p_{adjusted} = .020$) interaction terms remained supported, while the "Infidelity × Family Strain" ($p_{adjusted} = .13$) and "Infidelity × Employment status" ($p_{adjusted} = .15$) interaction terms fell from significance. We nevertheless performed simple slope analyses for all these interaction terms, though we urge caution in interpreting the ones that are not robust to corrections for multiple comparison.

Results indicated that when income was 1*SD* below the mean, infidelity was linked to increased chronic conditions ($b = 0.85$, $SE = 0.19$, $p < .001$). When income was 1*SD* above the mean, the association between infidelity and chronic conditions was no longer significant ($b = 0.20$, $SE = 0.15$, $p = .19$). Moreover, among White individuals, the association between infidelity and chronic health was significant ($b = 0.35$, $SE = 0.12$, $p = .005$). Among non-White individuals, the association between infidelity and chronic health remained significant but was even stronger ($b = 1.81$, $SE = 0.45$, $p < .001$).

Additionally, when family strain was 1*SD* below the mean, infidelity was not related to chronic health ($b = 0.11$, $SE = 0.17$, $p = .52$). Conversely, when family strain was 1*SD* above the mean, infidelity was linked to increased chronic conditions ($b = 0.61$, $SE = 0.16$, $p < .001$). Among individuals who were unemployed, infidelity was associated with more chronic conditions ($b = 0.71$, $SE = 0.18$, $p < .001$). Conversely, the association between infidelity and chronic conditions was non-significant among employed individuals ($b = 0.25$, $SE = 0.16$, $p = .12$). Simple slopes for family strain and employment status should be interpreted with caution as the interaction terms were not robust to corrections for multiple comparisons.

Discussion

Across both observed and latent variable analyses, we found converging evidence that partner infidelity was linked to poorer chronic health outcomes for non-involved partners. While previous research highlights the negative health impacts of relational difficulties, this study provides the first longitudinal evidence specifically on infidelity's lasting effects on chronic health. These enduring consequences likely stem from the psychological distress following the violation of trust and the relational contract. Infidelity, which dismantles self-worth and social integration (Rokach & Philibert-Lignières, 2015), has been shown to be the most devastating in terms of non-involved partners' feelings of hurt and powerlessness compared to other transgressions (Feeney, 2004). As a result of having their self-concept as well as their concept of romance and intimacy shattered (Gordon et al., 2004), individuals whose partners have been unfaithful are often plagued by feelings of inadequacy and unattractiveness, in addition to feeling responsible for the betrayal, which results in self-blame (Apostolou et al., 2022). This severe psychological distress has parallels to post-traumatic stress and suicidal ideation (Allen et al., 2005; Fife et al., 2008) and may have significant consequences on physical health, in line with betrayal trauma theory (Freyd et al., 2005; Goldsmith et al., 2011). Our findings align with prior research linking low relational quality to poorer physical health (Robles et al., 2014) and suggest that victims of partner infidelity may face additional chronic health challenges. While effect sizes were small, small but reliable effect sizes derived from large-scale public sample analyses that span multiple measurement waves are common and are likely to be of substantial practical significance (Adachi & Willoughby, 2015; Funder & Ozer, 2019). Unlike prior studies with small, exclusive samples, our analysis is based on a large sample of American adults, providing a robust examination of the long-term health impacts of partner infidelity. As partner infidelity is a difficult and sensitive topic to study, there exists very little empirical evidence directly testing the health consequences of partner infidelity, and the present work thus also provides empirical clarity to this poorly studied but highly pertinent topic.

Notably, follow-up moderation analyses found no evidence that having supportive family relationships or friendships would mitigate the negative chronic health implications of infidelity. There was weak evidence that heightened strain in family relationships outside of the partner relationship worsened these implications, but this was no longer supported following corrections for multiple comparisons. It may be possible that external stress from other relationships may have some negative spillover effect (Neff & Karney, 2009), though the effect could be relatively small and therefore did not remain robust in the present analyses. Moreover, participants' satisfaction with their current romantic relationship was also not found to moderate the link between infidelity and chronic health. The findings suggest that the debilitative consequences of partner infidelity on chronic health may be particularly unique, such that even having supportive relationships elsewhere is likely insufficient. Indeed, other perspectives suggest that romantic relationships are unique and distinct from other close relationships, and our findings are also consistent with what might be predicted by the dyadic biobehavioural stress model (Shrout, 2021). Individuals in romantic partnerships often view their partner

as their most significant social tie and confidant (Umberson et al., 1996) who plays a key role in constructing their social reality (Berger & Kellner, 1964). Considering the central role of romantic relationships in the process of meaning-making among many adults (Reis & Sprecher, 2009), romantic relationships often provide an increased sense of meaning and purpose in life (Hadden & Knee, 2016). However, partner infidelity can severely disrupt this bond, making it difficult to rebuild trust and meaning. The disruption of this pivotal relationship, which influences other aspects of individuals' social connections, may amplify feelings of uncertainty and negative emotions, potentially overshadowing the effects of social support from family and friends. Furthermore, romantic relationships are especially salient in middle-aged and older adults, as other relationships may be disrupted due to relocation and loss (Cornwell et al., 2008; Liu & Waite, 2014). Importantly, to our best knowledge, this study is the first to test whether positive friendships and family relationships can mitigate the health consequences of partner infidelity. Our findings suggest that even with strong supportive networks, victims of infidelity may still experience health difficulties, highlighting their vulnerability. Further research is needed to understand factors that might alleviate these difficulties.

Despite some evidence that demographic factors may be important predictors of marital quality and physical health (e.g., Choi & Marks, 2013; Miller et al., 2013; Whiteman et al., 2007), we found no strong evidence that age, gender, education level, marital status, and employment status moderated the relationship between infidelity and chronic health. This may be unsurprising considering that infidelity is broadly viewed by 91% of adults in the United States (Newport & Himelfarb, 2022; Treas & Giesen, 2000) as not only a betrayal to marital promise but also a form of deviant or immoral behaviour (Previti & Amato, 2004). While some studies suggest that poor marital quality affects men and women differently, gender differences are not consistently found (Moen et al., 2001; Rogers & Amato, 2000). A recent meta-analysis found that gender differences in the link between marital quality and health are small and limited (Robles, 2014). Infidelity is a particularly severe form of relational transgression, suggesting that it may be equally detrimental to health regardless of gender.

We did, however, find evidence that income and ethnicity moderated the relationship between infidelity and chronic conditions. Specifically, the negative links between infidelity and chronic health appear particularly inflated among low-income individuals and ethnic minorities. Notably, lower socioeconomic status (SES) is associated with higher levels of stress (Yang et al., 2018) and with lower levels of relational satisfaction (Dobrowolska et al., 2020), and individuals of lower SES may have less resources for managing relational and financial difficulties that emerge following partner infidelity. Of note as well, though the interaction term was not robust to corrections for multiple comparisons, there were similar trends in which infidelity appeared to be more detrimental for unemployed individuals, which is consistent with these findings. Through the lens of traditional stress frameworks (Lu et al., 2021) and race-based traumatic stress theory (Carter, 2007), stressful events caused by a partner's behavior may have more detrimental effects on poorer individuals or ethnic minorities who are already vulnerable to begin with, possibly by heightening appraisals of threat and undermining the personal resources needed to respond to these threats (Brondolo et al., 2016; Gallo & Matthews, 2003). Other

researchers have also found that social and economic stressors can affect the development of brain structures and processes necessary to support effective stress recovery (Hofmann et al., 2012).

Several limitations and future directions are notable. Firstly, though the MIDUS dataset is nationally representative, attrition and missing data may limit generalizability. Nevertheless, analyses in which this issue was addressed using FIML suggest that the findings are robust and reliable regardless of missing data. Secondly, the findings may not necessarily generalize to other populations or cultures outside of the United States. For example, in collectivistic cultures that emphasize the social group more strongly, such as Japan (Kuwabara et al., 2007), supportive relationships may better protect against infidelity's negative effects (Kuwabara et al., 2007), though this remains to be examined in future research. A third limitation is that the present conclusions preclude any definitive causal conclusions given the lack of experimental manipulation. However, the use of autoregressive longitudinal analyses in which baselines are controlled (Adachi & Willoughby, 2015) support partial directional associations and provide good naturalistic evidence, given that infidelity cannot be ethically manipulated experimentally.

Fourthly, another limitation is that the data may not accurately identify all instances of infidelity as well as contextual variables surrounding the infidelity. Due to the sensitivity of the topic, social desirability biases may lead to underreporting. Furthermore, infidelity was assessed based on participants' awareness, which assumes non-involved partners are aware of the infidelity. Given the secretive nature of infidelity, this may have resulted in underreporting. For example, emotional infidelity, which is easier to hide and more commonly associated with women (March et al., 2023), may lead to men being less aware and less likely to report their partner's infidelity. The present analyses are also unable to test for additional nuances regarding the nature, frequency and context surrounding the infidelity act due to the lack of such measures in the MIDUS. Long-term infidelity involving emotional commitment may be more detrimental to non-involved partners' health compared to short-term infidelity driven by impulses. While our measures capture the effects of spousal infidelity on non-involved partners, some studies suggest that perpetrators also experience negative effects (Rokach & Chan, 2023). However, due to the lack of information on involved partners, this cannot be examined in the present research. Additionally, there is no information on whether participants themselves engaged in infidelity. Individuals with a history of infidelity may be more accepting of it (Sharpe et al., 2013; Tsapelas et al., 2010), potentially moderating the negative effects on their health. Future research should examine whether mutual infidelity affects well-being differently. For example, no empirical work has explored the health effects of infidelity in open marriages, where partners agree to engage in relationships outside the marriage. Cohabitation relationships, despite similarities to marriage, may also be differentially affected by infidelity. These areas remain open for future investigation.

Conclusion

Our study provides the first empirical evidence linking partner infidelity to poorer long-term health in American adults. These negative health effects persist regardless of social

support from other relationships, suggesting infidelity's broad and enduring health impacts. There was also some evidence that the negative consequences of infidelity may be disproportionately high for minorities and individuals with lower-income, making them a particularly vulnerable population when infidelity occurs. This study advances our understanding of the health costs of partner infidelity and underscores the need for future research into interventions that both reduce the occurrence of infidelity and alleviate its health impacts.

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Open research statement

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Supplemental Material

Supplemental material for this article is available online.

Notes

1. Three additional items were included asking participants at what age they were when infidelity occurred, as well as the initial and long-term impact of the infidelity. These items were not included in the main analyses as participants who did not report any infidelity would be excluded when analysing these items, leading to a very small sample size. Nevertheless, in the interest of transparency, we analyze these items under Supplemental Analyses A.
2. As suggested by a Reviewer, we also grouped individual conditions into smaller categories of chronic conditions and analyzed these individual categories. For our main analyses, we focused on total number of chronic conditions to provide a more parsimonious interpretation, though we reported these additional analyses under Supplemental Analyses B.
3. MIDUS does not provide information on whether participants' current partner is the same partner who committed infidelity, and so we were unable to run specific analyses that control for

variables specific to the partner who committed infidelity. Nevertheless, we controlled for their current relationship's satisfaction to at least partially account for this variable.

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