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**Relations of Civil Liberties and Women's Health Satisfaction Around the Globe: The Explanatory Power of Autonomy**

**Abstract**

Research on how sociopolitical factors differentially affect the health and well-being of individuals is nascent and mechanisms responsible have not yet been identified. This work examined how the civil liberties afforded across 79 countries differentially affect the health satisfaction of men and women and tested one potential reason for this link: autonomy satisfaction, the experience of being choiceful and free to express oneself. Women reported lower health satisfaction in countries that were lower in civil liberties, a relation mediated by autonomy. Implications for women and other marginalized groups most affected by a society's restrictive policies and norms are discussed.

Keywords: *Inequalities; sociodemographic variables; women's health; self-determination theory*

### **Relations of Civil Liberties and Women's Health Satisfaction Around the Globe: The Explanatory Power of Autonomy**

Until recently, we had little understanding of how sociopolitical, structural factors impact the health and wellness of individuals (e.g., Amick, 1995; Link, Yang, Phelan, & Collins, 2004). Recently, research has begun to examine how laws, policies, and other structural factors affect the health of individuals within a population subject to these sociopolitical factors, and importantly, how they affect individuals differently as a function of group membership. A notable example of this is research showing detrimental effects of discriminatory state laws, such as bans on same-sex marriage, on the prevalence of psychiatric disorders in lesbian, gay, and bisexual individuals living in those states within the U.S. (Hatzenbuehler, McLaughlin, Keyes, & Hasin, 2010). Similar work has found consequences of other discriminatory structural factors, such as identifying that a lack of community-based health services negatively impacts on the health satisfaction of transgender individuals (Reisner et al., 2015), and that neighborhood segregation is harmful to the perceived health of racial minorities (Williams & Collins, 2001).

In this study, we explored how structural, sociopolitical factors translate to individual health differentially as a function of group standing, by examining a psychological mechanism that could explain how *civil liberties* – the laws and policies in a society governing individual rights like freedom of expression and freedom of religious beliefs (Puddington, 2016) – relate to individuals' health satisfaction. Specifically, we argue that a society's civil liberties represent a structural factor with consequences for individual *autonomy*, or the experience of being able to make meaningful choices which facilitate authentic self-expression (Ryan & Deci, 2000). We propose that autonomy plays a key role in understanding the health impacts of civil liberties afforded by a culture, as past research reveals a well-established link between experiencing oneself as having autonomy and better health cross-culturally (Custers, Westerhof, Kuin, Gerritsen, & Riksen-Walraven, 2012;

Deci & Ryan, 2008; Di Domenico & Fournier, 2014; Legate, Ryan, & Rogge, 2017; Ng et al., 2012). Moreover, we anticipate that women would be particularly vulnerable to feeling the costs of living in a society with low civil liberties since around the world, women are more likely to be constrained in their rights and freedoms as compared to men (Nussbaum & Glover, 1995), and previous research showing societal constraints affect women's health more so than they do men's (Moss, 2002; Sacker, Firth, Fitzpatrick, Lynch, & Bartley, 2000).

We were guided in our thinking by self-determination theory (Ryan & Deci, 2000), which theorizes links between distal, structural supports for autonomy and the proximal experience of it (see review in Ryan, Di Domenico, Ryan, & Deci, 2017). Elaborating on this view, we argue that to the extent a country fails to provide its residents with freedom of expression and belief, to demonstrate and assemble for a cause, and to pursue employment and educational opportunities, its residents' need for autonomy is thwarted. In support of this, nations that are more authoritarian seem to encourage individuals to inhibit self-expression and choice (Chirkov, Sheldon, & Ryan, 2011), and hierarchical practices where citizens have less power tend to undermine the need for autonomy in individuals within their nations (Chirkov, Ryan, Kim, & Kaplan, 2003). Experimental evidence further suggests that sociopolitical, structural factors might shape individuals' sense of autonomy. Specifically, laboratory work by (DeCaro, Janssen, & Lee, 2015) has shown that when a culture constructed in the lab is characterized by the loss of freedom around hypothetical policy making, individuals feel undermined in their autonomy. This finding offers initial causal support for the real-world impact of constrained civil liberties in a society: the loss of civil liberties such as a lack of protection for free speech, right to safety, academic and employment opportunities, and political freedoms (McClosky & Brill, 1985) likely has a detrimental effect on individuals' experiences of having autonomy. Complementing this, analyses at the societal level show that countries showing more support for human rights and economic

development also score highly on its citizens' *valuing* of autonomy (Inglehart & Oyserman, 2004). Thus, it seems that civil liberties can shape the lived experiences of individuals within societies in meaningful ways.

Moreover, there is reason to believe that autonomy is, in turn, important for shaping health satisfaction across countries. Although it is sometimes argued to be a Western construct (Iyengar & Lepper, 1999), a substantial body of research suggests that the experience of autonomy is universally beneficial, regardless of the degree to which it is, on average, supported or valued within the society in which people live. Cross-cultural studies comparing Eastern and Western cultures (Chen et al., 2015; V. Jang, Kim, & Reeve, 2012; Jang, Reeve, Ryan, & Kim, 2009; Taylor & Lonsdale, 2010; Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004; Zhou, Ma, & Deci, 2009), South Asian and African cultures (Marbell & Grolnick, 2013; Sheldon, Abad, & Omoile, 2009), and cultures of the Middle East, namely, Jordan, (Ahmad, Vansteenkiste, & Soenens, 2013) find that autonomy is essential for health and wellness. As such, autonomy is a likely candidate for explaining why freedoms provided at the country-level have been linked to individuals' subjective experiences of their health in multi-nation studies (Franco, Álvarez-Dardet, & Ruiz, 2004).

To better understand how civil liberties relate to health satisfaction, of interest was the possibility that societies impact individuals' autonomy differentially as a function of gender. In general, women report lower self-rated health than men, and it is thought this is likely because of social inequalities experienced by women (Zajacova, Huzurbazar, & Todd, 2017), such as restricted freedoms in terms of education, profession, mobility and marriage in many countries (e.g., Lee & Shaw, 2011). While the underlying mechanisms for the association between sociopolitical structures and health are underexplored (Franco et al., 2004; Major, Dovidio, & Link, 2018), qualitative analyses show women

from nations more likely to restrict their freedoms identified this violation of autonomy as a primary reason for attempted or contemplated suicide (van Bergen & Saharso, 2016). Though still nascent, the existing quantitative literature suggests that the health disparity women face around the world might be in part explained by lower autonomy experienced by this group.

### **Present Research**

The present research links civil liberties afforded at the national level with women's and men's self-reported autonomy and health satisfaction, and by doing so extends previous work in a number of ways. First, we linked the affordance of choice and self-expression at the country level (operationalized in terms of country-level civil liberties) and at the level of individual experience (i.e., the psychological need for autonomy). Second, we examined whether this link is even more important in women, since women are more vulnerable than men to having their freedoms restricted. Third, we explored whether autonomy helps to explain a link between civil liberties and reports of health satisfaction, a self-evaluation that should broadly reflect a sense of health and well-being (Kaplan & Baron-Epel, 2003). Taken together, we expected that restricted civil liberties would have a detrimental effect on health satisfaction, and women's health satisfaction in particular, because of its particular impact on autonomy (see Figure 1 at [osf.io/gwqdu](https://osf.io/gwqdu) for the hypothesized model). To test this expectation, we analyzed data from the World Values Survey in combination with Freedom in the World 2012 (FIW; Puddington, 2016) codes of civil liberties for a highly representative, global sample.

### **Methods**

#### **Participants and Procedure**

Data used in this study relied on responses collected from two studies. The first of these, the World Values Survey (WVS; Ronald Inglehart, 2000), includes responses from individuals in 98 countries collected across six waves in 1981-2014. Our primary predictor at the country level, civil liberties, was extracted from the Freedom in the World coding (Puddington, 2016). Thirteen countries in the WVS did not have data from the FIW and were excluded from analyses, and along with the remaining pattern of missing data at the country level (Gross Domestic Product—four countries missing) and the individual level (autonomy-5.9%, health satisfaction-3.4%, sex-1.4%, income-10.0%, age-2.8%); this reduced the total sample to 209,064 participants (49% male) and 79 countries ( $M = 2,646$  participants per country). Participants were aged 14-99 years ( $M = 40.8$  years,  $SD = 16.1$  years). The World Values Survey coded household income in 10-steps from lowest (first step) to highest (tenth step) as a function of where the participant's income fell relative to the country's average. Countries, numbers of respondents, and means for major study variables by country are listed in a supplementary Table 1 available on [osf.io/gwqdu](https://osf.io/gwqdu). This study involved the analysis of existing data, and as such no additional ethical approval was sought or acquired; ethical procedures are documented alongside the data online (see below); participants provided informed consent. Additional methods, supplementary tables, and supplementary figures are available on [osf.io/gwqdu](https://osf.io/gwqdu).

**Freedom in the World coding** (FIW, 2012; Puddington, 2016). Informing the country-level coding of civil liberties, civil liberty data was collected from respondents in 85 nations included in the WVS, as part of a large-scale survey of 3,016,566,100 people. A numerical rating on a 7-point scale was used in the original coding scheme, from 1 (*most free*) to 7 (*least free*). For ease of interpretation, we reverse coded this variable such that higher scores reflect higher civil liberties (See more on this measure in supplementary additional methods).

**World Values Survey** (WVS; Inglehart, 2000). The second source of data comprised of individual-level autonomy and health satisfaction from the World Values Survey. As part of this survey participants completed self-reports of autonomy and health satisfaction, and their standing on a number of demographic variables (Inglehart, 2000). First, autonomy was measured with the following item: “How much freedom of choice and control do you have over your life?” paired with a scale ranging from 1 (*none at all*) to 10 (*a great deal*). The average across respondents was  $M = 6.84$ ,  $SD = 2.42$ . Second, self-rated health satisfaction was measured with the item; “all in all, how would you describe your state of health these days?”, paired with a five-point scale ranging from 1 (*very poor*) to 5 (*very good*); the construct is further described in supplementary additional methods. Across countries, the average rating of health satisfaction was 3.54 ( $SD = .97$ ).

Further, each country’s wealth was added as a control at Level 2 (country level), represented by 2005–2007 per capita gross domestic product (GDP) data of each nation as computed by the World Bank. The logarithm of the GDP data was taken in log 10 units in order for the multilevel model to reach convergence; this is a common approach when using this variable (Diener, Ng, Harter, & Arora, 2010).

**Data sharing statement.** Materials and data reported in this study (income, demographics, autonomy, health satisfaction) are freely available to researchers by going to <http://www.worldvaluessurvey.org/>, where these data are held and documented extensively, and to <https://freedomhouse.org/report-types/freedom-world>, where civil liberty data are held and extensively documented. We conducted secondary data analyses on these datasets but imagine they are available immediately and indefinitely. These data do not identify individual respondents. Our syntax and output associated with the reported analyses are available on [osf.io/gwqdu](https://osf.io/gwqdu).

## Results

Mplus software (version 7.4; Muthén & Muthén, 2005) was used to test the hypothesized multilevel moderated mediation model (supplementary Figure 1). Multilevel models accommodate the nested structure of the data and are better suited than ordinary-least squares regression to handle missing data (Bolger & Shrout, 2011; Little & Rubin, 2002). Expectably, a source of missing data was missing responses for individuals within countries. We examined intraclass correlation coefficients (ICCs) to determine the variance explained at the country level; sufficient variance was present (.09 – .10) for the mediator and outcome to continue with analyses (ICCs must be above .05; Preacher, Zyphur, & Zhang, 2010).

Next, we built a multilevel moderated mediation model testing whether gender predicts individual autonomy, and in turn, whether autonomy predicts health satisfaction (effects at Level 1), and further, whether this indirect effect depends on living in a country that is high or low in civil liberties (Level 2). In other words, we were interested in both a main indirect effect of whether women uniformly experience worse health satisfaction than men because of lower autonomy, as well as knowing whether this gender effect varied for those in countries high or low in civil liberties. In addition to the cross-level interaction effects of civil liberties and gender, we specified main effects of civil liberties predicting both autonomy and health satisfaction averaged at the country level (Level 2).

When defining models, gender was left uncentered at Level 1 as a dichotomous predictor (males coded 1, females coded 2), civil liberties (at Level 2) was grand-mean centered, and autonomy (mediator) and health satisfaction (outcome) were left uncentered as they were modeled at both Levels 1 and 2 per recommendations of Preacher and colleagues (2010) for testing multilevel mediation. Additionally, age and household income were added as Level 1 controls (both group-mean centered) predicting both health satisfaction and autonomy. Finally, GDP (grand-mean

centered) was entered as a Level 2 control predicting health satisfaction and autonomy. All coefficients are unstandardized, and are presented with 95% confidence intervals (CI). Results are summarized in supplementary Table 2.

### **Predicting Autonomy**

At the country level (Level 2), autonomy averaged across respondents in a country was predicted by that country's GDP,  $B = .33, p = .04$ , 95% CI [.02, .64]. Within countries (Level 1), older individuals reported less autonomy,  $B = -.003, p = .03$ , 95% CI [-.01, .00], and those with a higher income reported more autonomy,  $B = .14, p < .001$ , 95% CI [.11, .16].

Controlling for this, women had lower autonomy than men within countries (Level 1),  $B = -.16, p < .001$ , 95% CI [-.21, -.10]. Surprisingly, civil liberties in a country did not relate to the average reported autonomy in a country,  $B = -.03, p = .62$ , 95% CI [-.13, .08], but gender at Level 1 significantly interacted with civil liberties at Level 2,  $B = .08, p < .001$ , 95% CI [.05, .11]. To examine this cross-level interaction, we tested simple slopes at high and low values of civil liberties (calculated at 1 SD above and below the mean). Results showed that women had lower autonomy than men in countries low in civil liberties,  $B = -.28, p < .001$ , 95% CI [-.37, -.20], and in countries with average levels of civil liberties,  $B = -.16, p < .001$ , 95% CI [-.21, -.10], whereas autonomy did not differ for men and women in countries high in civil liberties,  $B = -.04, p = .27$ , 95% CI [-.10, .03] (see also supplementary Figure 2 for the relations between civil liberties and autonomy for men and women, separately).

### **Predicting Health Satisfaction**

At the country level (Level 2), average country-level health satisfaction was not predicted by GDP ( $p = .91$ ). At the within-country level (Level 1), older individuals reported worse health satisfaction,  $B = -.01, p < .001, 95\% \text{ CI } [-.02, -.01]$ , and wealthier individuals reported better health satisfaction,  $B = .05, p < .001, 95\% \text{ CI } [.04, .06]$ .

Within countries (Level 1), women reported worse health satisfaction than men,  $B = -.09, p < .001, 95\% \text{ CI } [-.11, -.07]$ . However, contrary to predictions, civil liberties did not show a main effect with country-level health satisfaction,  $B = -.01, p = .75, 95\% \text{ CI } [-.04, .03]$ , nor did the construct interact with gender to predict individual-level health satisfaction,  $B = .005, p = .35, 95\% \text{ CI } [-.01, .02]$ . Importantly, individuals reporting higher autonomy also reported better health satisfaction,  $B = .04, p < .001, 95\% \text{ CI } [.04, .05]$  (see Figure 3). Additionally, because we followed recommendations by Preacher et al. (2010) for testing indirect effects within multilevel models, we tested for a country-level effect of autonomy on health satisfaction in order to avoid potential confounding of the mediation effect. Results showed that a country's average level of autonomy predicted the country's average level of health satisfaction,  $B = .17, p < .001, 95\% \text{ CI } [.10, .25]$ .

### **Moderated Mediation**

We further tested whether women had worse health satisfaction than men because of their lowered autonomy, and whether this indirect effect was moderated by civil liberties (See supplementary Figure 3 for a summary). When calculating all indirect effects, the autonomy to health satisfaction path was composed of both within- and between-country level effects (Preacher et al., 2010).

As predicted, the main indirect effect of women reporting worse health satisfaction than men through autonomy was significant,  $B = -.03, SE = .01, p < .001, 95\% \text{ CI } [-.05, -.02]$ . The indirect effect was moderated by civil liberties,  $B = .02, SE = .005, p < .001, 95\% \text{ CI } [.01, .03]$ ,

such that in countries low in civil liberties, women report worse health satisfaction because they experience lower autonomy in those countries,  $B = -.06$ ,  $SE = .01$ ,  $p < .001$ , 95% CI [-.09, -.03]. This same effect was present (though weaker) in countries with the average level of civil liberties,  $B = -.03$ ,  $SE = .01$ ,  $p < .001$ , 95% CI [-.05, -.02]. However there was no indirect effect present in countries high in civil liberties,  $B = -.01$ ,  $SE = .01$ ,  $p = .28$ , 95% CI [-.02, .01].

### Discussion

Distal economic, political, and social factors may have a profound impact on the wellness of individuals, yet we still have little understanding of how these factors at the societal level translate to psychological experiences at the individual level (J. S. House & Mortimer, 1990), particularly in terms of how they differentially affect individuals within a society (Amick, Levine, Tavlov, & Chapman Walsh, 1995). This study relied on a large, globally representative sample of men and women across seventy-nine countries to understand how civil liberties may impact the autonomy and health satisfaction of men and women.

As hypothesized, women showed worse health satisfaction than men because they experienced lower autonomy. Importantly, this was only the case for women in countries with low or average levels of civil liberties; women living in countries with high civil liberties did not show this pattern, and did not differ from men in terms of their individual autonomy, though women consistently reported worse health satisfaction than men regardless of the level of civil liberties afforded by their country of residence.

Despite no observed differences in self-reported autonomy between men and women in countries high in civil liberties, it is undeniable that gender inequalities also exist in these countries (Itzin & Newman, 1995; Mikula, Freudenthaler, Brennacher-Kroll, & Brunschko, 1997;

Ridgeway, 2007; Spoor & Schmitt, 2006), and that stereotypes relating to gender roles and gender characteristics are still prevalent (Ellemers & Barreto, 2009; Jost & Kay, 2005). Global perceived autonomy as measured in the WVS might not be sensitive to gender roles and stereotypes in countries where they are present but more subtle; and further, it is likely that those gender roles and gender stereotypes are more pronounced in countries with low civil liberties. If this is the case, the present study suggests that the loss of national civil liberties restricts the opportunity to gain autonomy in a more global way, placing women in these countries in circumstances where little autonomy is afforded across various life domains. For example this might be the case professionally, in terms of lifestyle decisions, and in close relationships.

Such a finding highlights the need to invest resources into empowering women in countries low in civil liberties, a view that is echoed by reports calling for investment in girls' and women's education, personal freedoms, and market opportunities (Dollar & Gatti, 1999; Winkler & Schultz, 1997), and encouraging empowerment alongside economic opportunities (Birdsall, 1993; Duflo, 2012). Opportunities, such as those that provide microcredits to disadvantaged women globally to allow them to start private businesses (Mohindra & Haddad, 2005), might have a direct impact on women's autonomy and an indirect impact on their health satisfaction. Empirically, these findings suggest value in future research focusing on policies and practices in more specific life domains, such as in professional and educational settings, to investigate their impacts on autonomy and health satisfaction, as these are easier to target and modify than the country-level sociopolitical factors examined here.

Surprisingly, civil liberties did not relate to average autonomy in a country. That we observed a significant interaction between civil liberties and gender on autonomy but not a main effect of civil liberties is noteworthy. Together, these results suggest that women experience negative effects of living in a country with constrained civil liberties. Though we expected a *stronger* effect for women, we did not expect to

*only* observe this effect in women. While civil liberties scores factored in discrimination against women, much of the score was based on ratings of broad freedoms (e.g., freedom of religious beliefs, freedom of assembly, independence of the media) that should, on face value, impact all citizens. However, it is likely that civil liberty constraints only negatively affected women for a few different reasons. First, it is possible that the domains most likely to be especially constraining for women (e.g., freedom to own property, pursue employment opportunities) directly impact individual autonomy more than other domains (e.g., freedom of assembly). Related, men in countries low in civil liberties may still experience autonomy in more proximal life contexts such as at work or at home, thus compensating for certain other restrictions (Weinstein, 2014), whereas women in these countries may also face constraints in these proximal life contexts, limiting autonomy. To our knowledge, these possibilities have not been tested and thus represent important directions of future research.

Importantly, the satisfaction of the need for autonomy had implications for health satisfaction across countries, highlighting the importance of this psychological experience for both men's and women's wellness which is consistent with previous findings in both Eastern and Western countries (see review in Ryan & Deci, 2017). New to this study, we found that one important reason why civil liberties may impact health satisfaction, and indeed may do so differentially for men and women, is through the experience of autonomy. Thus, lower autonomy seems to be an explanatory mechanism that helps account for the consistent finding that women have lower health satisfaction (Moss, 2002; Sacker et al., 2000). It also is consistent with literature showing women are afforded lower freedoms in many countries (Zajacova et al., 2017). Put together, women's autonomy may affect their health satisfaction directly, in that autonomy may afford women more choices and options in

healthcare (Fogel & Woods, 1995), among other domains. This reason for the link between autonomy and health satisfaction should be explored systematically in future investigations.

These findings supported expectations based in self-determination theory that the degree to which policies, laws, and regulations promote civil rights and freedom of expression and beliefs, they also promote autonomy among citizens (Ryan & Deci, 2017). Further, these findings complement an emerging body of research showing that structural factors can impact people's need for autonomy. For example, work has shown that socioeconomic status can have a detrimental effect on needs such as the one for autonomy, but only to an extent: once above the line of poverty, the relation between income and wellness is much weaker (Kasser, 2002). Although it was not our focus in the present paper, we found a linear relationship for individuals with more income reporting more autonomy across countries, although we did not find this at the country level; that is, richer countries did not produce individuals with more autonomy. In the future, research can build on our focus on structural factors such as GDP and civil liberties, to identify how structural factors interact with cultural ones to shape individuals' experiences. To date, the impacts of culture, and societal norms and customs have received much attention (e.g., Lemmon & Sherif, 1938; Oyserman, Coon, & Kemmelmeier, 2002; Triandis, 1994), while less attention has been given to the role of sociopolitical structures such as laws and regulations – studied here – that may be linked, but are conceptually and empirically independent, from cultural qualities such as civic cooperation (Almond, 2015) and collectivist and individualist orientations (Triandis, 1994). Further insights may be gained by considering these factors as part of more complex models of intersectionality in explaining the health and well-being of various populations.

The study findings should be considered in light of a number of methodological limitations. Most importantly, measures of both autonomy and health satisfaction were brief (one item), which likely limited their ability to comprehensively reflect the underlying construct which they were intended to measure, and future research should examine the impact of civil liberties on different aspects of autonomy, including the experience that one can freely and authentically express oneself, the feeling of choice, and the experience of acting in accordance with one's values and interests, all important and distinct aspects that together comprise autonomy (Ryan & Deci, 2017). Second, WVS data were collected across 30 years, while the FIW represented a much shorter time frame toward the end of this period. Although our estimated effects may be weakened by noise in the data due to shifts in civil liberties within certain countries across the time frame of the WVS, it is worth noting that most data (67.4%) were recorded in years closely matching the FIW. Finally, we considered the role that civil liberties has on autonomy and health satisfaction, broadly, but it may be that civil liberties acts on autonomy through various cultural practices, norms, and opportunities, which should be evaluated more explicitly in future research. In other words, the means by which civil liberties are afforded within a culture may vary as a function of both that culture and the characteristics of individuals within it (e.g., as a function of gender, but also by socioeconomic status), and this would be a fascinating avenue for future research.

### **Conclusion**

Despite limitations of the study, findings that connected two impressive sources of data representing populations around the world highlighted the importance of both sociopolitical supports, in the form of civil liberties, and group standing in the form of gender, for experiencing autonomy, a basic psychological need that is essential for health and well-being (Ryan & Deci, 2000). By doing so, this study

advanced other work showing a link between structural factors and health by revealing one potential mechanism: that a society's restrictive policies and practices hurt the individual autonomy of those affected by them, which in turn also undermines individuals' satisfaction with their health as an indicator of well-being. It will be important to test whether autonomy similarly explains the structural discrimination-health link seen in other stigmatized groups (Hatzenbuehler, 2016). Further, while this growing area of research has mostly focused on structural discrimination having deleterious health effects for racial minorities (Williams & Collins, 2001) and sexual minorities (Hatzenbuehler et al., 2010), this study represents the first wide-scale examination of this issue among women. As such, future research should replicate and extend these findings, not only examining the impact of structural factors cross-culturally at one point in time, but longitudinally in order to track shifts in individual autonomy and health as a function of changes in laws and cultural practices around the globe.

**Conflict of Interest**

The Authors declare that there is no conflict of interest.

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